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## ABSTRACT

This publication is designed to help home economics teachers as they identify and teach basic skills in their programs. Part I, "Basic Skills Instruction in Home Economics" (Miller), discusses strategies for supplementing basic skills through home economics content. It addresses preparation of home economics teachers to incorporate basic skills in their classes and gives information on the movement to grant academic credit for home economics classes. A list of 31 references follows. Part II, "Basic Skills Activities," is divided into four sections, each dealing with a different major basic skill relevant to home economics: "Communication" (Thompson, Sproles); "Mathematics" (Hall, Williams); "Physical and Life Science" (Moss); and "Social Studies" (Van Buren). Each section begins with an introduction to the use of the basic skills area in home economics, followed by student activities that can be used in teaching the skill. Within sections, activities are organized into the following content areas: consumer education/resource management, housing/home furnishings, human development, nutrition/foods, and textiles/clothing. For each activity, the home economics content area, basic skill, home economics application, and directions are indicated. Part II lists 74 selected references and resources and includes a source list. (YLB)

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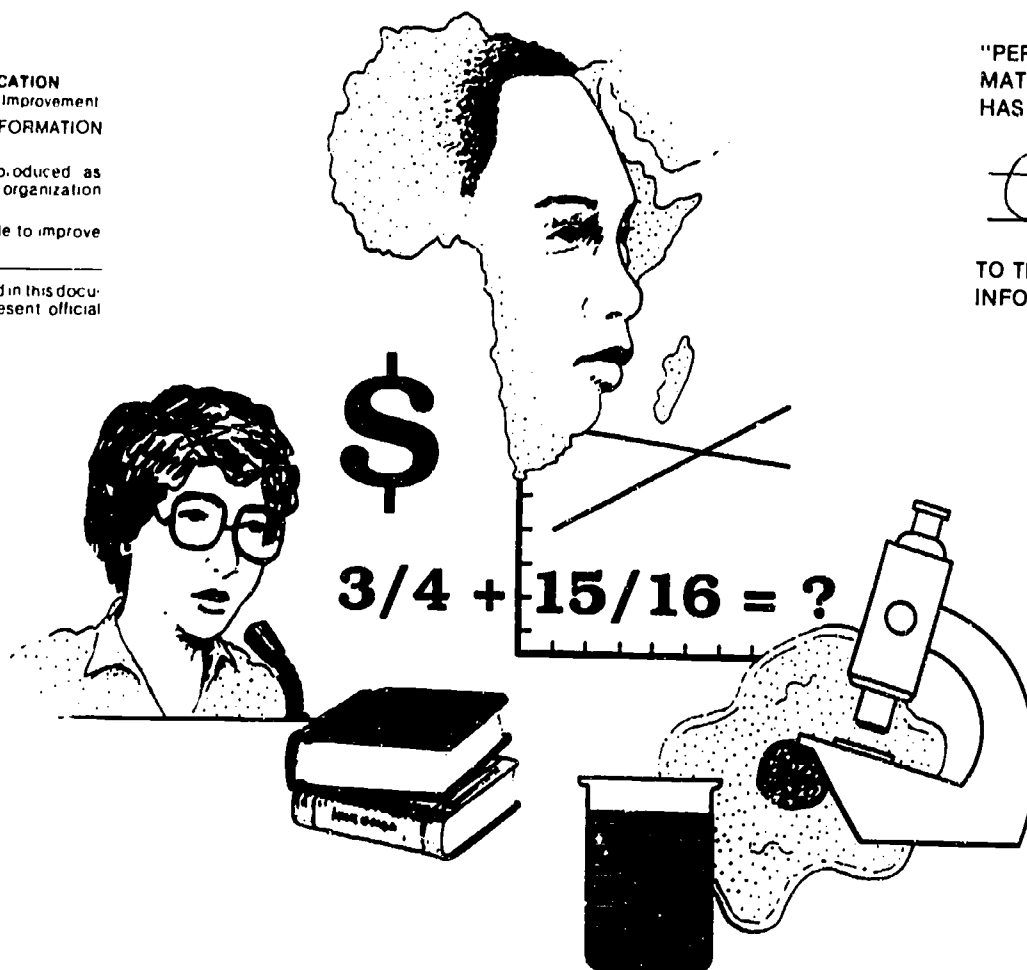
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Edited by  
Sandra W. Miller and Charlotte R. Tulloch  
University of Kentucky

Developed by  
Basic Skills Subcommittee of the Home Economics Research Committee  
American Vocational Association

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# TEACHING BASIC SKILLS THROUGH HOME ECONOMICS

Instructional Activities for Home Economics Students

Developed by  
Basic Skills Subcommittee of the Home Economics Research Committee  
American Vocational Association

Coordinated by  
Sandra W. Miller and Charlotte R. Tulloch, Editors

1989

**HEEA/** HOME ECONOMICS EDUCATION ASSOCIATION  
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## FOREWORD

Home economics offers the content and environment for students to apply and practice skills and knowledge from a variety of areas, in situations related to everyday life. Home economics teachers have the education and experience to help students "pull it all together."

Several researchers have documented the need for students to receive additional educational opportunities for applying the basics. Current legislative initiatives include a focus on the role vocational education can play in student development of basic skills.

In *Teaching Basic Skills Through Home Economics*, the Basic Skills Sub-committee of the Home Economics Research Committee has provided information and activities that can assist teachers as they identify and teach basic skills in their program. This monograph combines a discussion of the basic skills taught in home economics with teaching activities for a variety of areas. This monograph can serve as a valuable resource for home economics teachers.

The Home Economics Education Association truly appreciates the persons who assisted in the development of this monograph. These people include:

Editors — Sandra Miller and Charlotte Tulloch

Basic Skills Sub-committee — Helen C. Hall, Sandra Miller,

Darlene Pincock Moss, Elizabeth Kendall Sproles, Cecilia

K. Thompson, Janis B. Van Buren, and Sally K. Williams

The efforts of these persons have provided a resource that should enable home economics educators to examine their programs and identify appropriate ways to teach the basics in home economics.

Virginia L. Clark

President, HEEA, 1987 to 1989

# ACKNOWLEDGMENTS

According to a number of national reports on the status of American education, basic skills need to be stressed more in public schools. This publication, developed by the Basic Skills Subcommittee of the Home Economics Research Committee, American Vocational Association, was designed as a means to reach this goal through home economics instruction. Subcommittee members who authored sections of this publication are:

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Wendy Way, University of Wisconsin-Madison

We hope the publication will enable teachers to incorporate more basic skills instruction in their classes. In addition, we hope they will find the reading and activities informative and interesting.

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# **PART I**

## **BASIC SKILLS INSTRUCTION IN HOME ECONOMICS**

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In the past decade student performance on national and state basic competency tests has been disappointing. For example, in 1983 about 13% of all 17 year olds were considered functionally illiterate (American Council of Life Insurance). Illiteracy, however, goes far beyond the traditional definition that deals with reading comprehension. Mathematics is another basic skill area in which many individuals are deficient. For example, in a study conducted by the Center for Public Resources (Henry and Raymond, 1982), employers reported that 50% of skilled and unskilled employees were unable to solve math problems using decimals and fractions.

Widespread concern for this national problem has been reflected in numerous reports, legislative acts, and funding allocations. In the reports, the high national student drop-out rate has been linked to deficiencies in basic skills, and even students who are getting A's and B's are characterized as at risk because they are ineffective in using basic skills to solve problems. Discussing such problems as the relationship between student acquisition of basic skills and quality of life, employability, and national productivity, *A Nation at Risk* (1983) and other educational reform reports concurred that more attention must be given to basic skills in school curriculum. Phelps and Hughes (1986), discussing recommendations of the 1984 National Commission on Secondary Vocational Education (NCSVE), wrote that "Perhaps the most pervasive and central problem identified by the NSCVE is the need for vocational education at the secondary level to address the matter of basic skills" (p. 57). *A Nation At Risk* specifically recommended that state and local high school graduation requirements be strengthened to include a foundation in what the report identified as the "new basics"—English, mathematics, science, social studies, and computer science.

The purpose of this portion of this publication is to discuss the role of home economics in basic skills instruction and strategies for supplementing basic skills through home economics content. The preparation of home economics teachers to incorporate basic skills in their classes is addressed. Finally, information is given on the trend to grant academic credit for home economics classes.

### **Contributions of Home Economics to Basic Skills Instruction**

Because basic skills are essential for full and successful participation in modern society, they are a critical area of learning that needs to be included in the total school curriculum. Home economics has a vital role in this team effort. Through home economics, an applied

field, basic skills can be taught as a means to an end, not as an end in themselves. Home economics educators Chamberlain and Kelly (1981) wrote that "Many researchers have pointed out that students learn more and are more highly motivated when the subject matter is relevant to their lives and to their personal goals." (p. 191). The Home Economics Education Association's publication *A Quest for Quality: Consumer and Homemaking Education in the 80s* (1985) presented examples of contributions Consumer and Homemaking programs can make to quality education. The statement, developed by the Vocational Home Economics Education Coalition, pointed out that:

Consumer and Homemaking Education, like other areas of Vocational Education, contributes a great deal to the mastery of basic skills. Learners begin at a concrete level—seeing, comprehending, and practicing principles in familiar day-to-day settings. Vocational Education *applies* principles and theories. It shows students how to use basic skills, judges them on mastering the application, and leads the students to the selection and integration of appropriate information in decision-making to solve the daily problems of work and living. Consumer and Homemaking Education supplements basic skills instruction as it facilitates the *use* of those skills in the family life of students. It is no longer enough to know. It is no longer enough to do. Intelligent persons in an ever increasingly complex society must be able to understand, interpret and apply basic skills in suitable ways. (p. 3)

Home economics teachers have a particular responsibility for incorporating basic skills in their programs as, in a group studied by Weber et al. (1982), the basic skills performance of home economics students was lower than students in any of the other vocational subject areas. Further, in a group studied by Hilton (1971), the eleventh grade home economics students achieved a performance level in mathematics which academic students achieved in grade seven.

Citing mathematics as an example, Williams and Parkhurst (1988) proposed that while the overriding goal of home economics is not to teach basic skills per se, these skills are essential to students in accomplishing home economics competencies. Thus, when students "are unable to perform these skills, the home economics teacher has a responsibility to teach the skills" (p. 16).

Fortunately, home economics teachers support reinforcing basic skills concepts in their curricula. For example, Parkhurst (1986) found that home economics teachers express positive attitudes toward incorporating mathematics in their foods classes. Moss (1986) reported that secondary vocational home economics teachers perceived basic mathematics skills and science strategies as an essential part of home economics subject matter. However, the teachers incorporated the skills to a lesser extent than they perceived they should be. In Ellis's (1986) study, the teachers said they could teach reading in their programs without infringing on the home economics subject matter. Thompson's 1983 research showed that junior and senior high home economics teachers assigned extensive reading even in the subject areas of foods and nutrition and clothing and textiles.

When home economics instruction is focused so that development of basic skills is a priority, there are positive results. In a Florida study, eighth grade students whose reading achievement scores fell between second and fourth grade level were given an individualized self-concept approach to reading instruction in home economics. Students studied nutrition,

kept track of their nutrition habits, and learned to read labels. At the end of the six week period of the study, 62% of the students had made gains in vocabulary, 43% had made gains in comprehension, 52% had improved their grades, 75% had improved their self-concept as witnessed by their social behavior, and 63% showed more enthusiasm for home economics (Comerford, 1980).

Two Tennessee studies showed similar results. Twenty-six ninth grade students with reading problems and interest in home economics were enrolled in a specially designed Home Economics/Reading course. The course was taught by a teacher certified in both home economics and reading. Remaining ninth grade students with identified reading problems were placed in one of thirteen Basic Reading Skills/Remedial Reading Classes. An administration of the Proficiency Reading Test at the end of the ninth grade showed that the students in the Home Economics/Reading course learned language arts skills as well as those in the regular Remedial Reading Class (Metropolitan Public Schools, 1985). In a later study (Harris, Hudson, and Lanier, 1987) set up in a similar manner, self-esteem as a variable in reading effectiveness was studied. The difference between the studies was that students in the 1987 study did not have a choice based on expressed interest in home economics as to which class to attend—the regular remedial reading/class or the home economics/reading class. Members of the experimental group reported significantly greater positive feelings about themselves in five of eight subscales on the Tennessee Self-Concept Scale and for the total self-concept measure than did members of the control group.

Parkhurst (1986) developed and evaluated the effectiveness of two instructional modules (Food Cost Comparison and Recipe Adjustments, Preparation, and Measurement) that integrated mathematics skills in a secondary school food course. The materials were considered effective in that the experimental group scored statistically higher than the control group.

Jensen compared the effectiveness of teaching milk related science concepts to secondary students by three different curricula: state approved foods and nutrition course, state approved physical science course, and researcher designed foods and nutrition experimental approach. Students instructed with the experimental approach scored significantly higher on overall knowledge of applied science concepts than students in the physical science and other foods and nutrition courses.

In vocational education, of which home economics is a part, the basic skills levels of potential and actual dropouts increase substantially when they participate in vocational-oriented programs with basic skills competencies (Weber and Silvani-Lacey, 1983). It also appears that basic skills proficiency is significantly related to employment level, salary, and employment in areas of learning (Lotto, 1983; Weber et al., 1983).

## **Strategies For Teaching the Basics Through Home Economics Education**

In home economics, basic skills instruction typically is delivered through a support-oriented model, with the goal being to reinforce proficiencies in basic skills. In such a model, the teacher's responsibilities are to:

1. Diagnose student basic skills levels,

2. Identify basic skills requirements in the content area (in this case, home economics), and
3. Remediate basic skills deficiencies and/or reinforce basic instruction delivered by subject matter specialists (e.g., mathematics and science teachers). (Campbell-Thrane, Manning, Okeafor, and Williams, 1983).

In addition, it is important for home economics teachers to inform other educators and the public that basic academic skills are being taught in their courses.

## Diagnosis of Student Basic Skill Levels

Hall and Sproles (1988) state that students are considered deficient in an area if they are two grade levels below where they should be. While testing can specifically identify a student's basic skill levels, testing often is not necessary to make an estimation. Observation of academic and social behavior typically will provide clues. According to Harris and Kendall (1978), students who are basic skills deficient have one or more of the following characteristics: poor work or study habits, lack of motivation, inadequately developed basic reading skills, dislike for school, and physical or emotional difficulty.

## Identification of Basic Skills in Home Economics

A clear identification of how basic skills are incorporated in one's home economics program is important. A simple, yet effective way to do this is to make a matrix on which the concepts taught in each course in a program are listed across the top, and basic skills competencies are listed down the side. If such a list cannot be located, basic skills specialist teachers in a school can be asked for help in developing one. Following development of the grid, one checks off basic skills that are incorporated when each concept is taught.

**SAMPLE MATRIX**

	MGT CONCEPTS		
	Saving Energy in the home	Managing a checking account	Using banking services
<b>MATHEMATICS BASIC SKILL COMPETENCES</b>			
Read a Celsius or Fahrenheit thermometer to the nearest unit marked.	X		
Identify data relevant to the problem being solved from the statement of the problem.	X	X	
Identify appropriate units to measure mass.			
Estimate the answer to a computation problem.	X	X	X

From such a chart, one gets a good picture of which basic skill subjects are most often incorporated in each course, and weak spots can be identified. The chart can be used as a tool in communicating to others where basic skills are taught. Further, it might be used as a base for justifying new courses.

Using this process, Van Buren (1988) showed language arts and social studies basic skills being included in all Missouri home economics subject areas in all grades 6-12. Math and science basic skills, however, were not as broadly represented.

Using an interface process, Harrison (1988) found strong evidence of application of the academics in Louisiana's home economics curriculum, and concluded that her results could be used to illustrate that home economics subjects have adequate skill content to substitute for certain academic credit courses. In the Louisiana curriculum, science was most often integrated in foods and nutrition. Math competencies were reinforced more often in clothing and textiles than in any other subject area.

### **Basic Skills Instructional Methods and Materials**

Home economics educators have always taught basic skills. However, the renewed concern for basic skills may require different strategies and new curriculum materials that specifically highlight the basic skills orientation. For example, in addition to having a home economics instructional objective, a teacher might have a basic skills objective and share both of them with students. This will help the students understand the relationship between academic basic skills and home economics subject matter. Thus students may develop more respect for home economics and, in addition, gain a greater appreciation of the value of the basic skills competency. Because the basic skill objective will now be more visible, instruction will be planned to accomplish it, and the teacher will be more likely to evaluate how effectively the basic skill was taught.

Because of the recent surge in concern for basic skills attainment, a number of new curriculum materials with this focus have been developed. One example is this monograph. Further, many states have developed basic skills materials; and as states have developed new curricula, basic skills have become an integral part of the curriculum design. A resource list at the end of this monograph lists some of these, along with other curriculum materials for teaching basic skills within the context of home economics.

### **Publicizing Basic Skills Integration in Home Economics**

Informing others of the renewed commitment of home economics to basic skills will gain respect and recognition for the teacher, students, and program. The concerted efforts of home economics to teach basic skills should be described to other teachers. Teachers in the respective basic skills subject areas particularly need to be made aware of home economics instruction as it relates to their programs. A good discussion opener would be the presentation of a basic skills/home economics matrix chart. Other audiences with whom to share the chart would be guidance counselors, administrators, advisory council members, and parents.

When individuals visit a home economics class, they should be informed of both the home economics and basic skill objectives for the day. They should be told, for exam-

ple, "Today's home economics objective is to learn the stages of the family life cycle. Our basic skills competency is graphing. Each student is going to draw a graph that illustrates the amount of time spent in each stage of the cycle."

## **Preparation of Teachers for Basic Skills Instruction**

A strategy used to improve basic skills instruction for students is training for the teachers, otherwise known as the instructional improvement approach (Lotto). Several home economics and vocational teacher education studies illustrate use of this approach. The population for Ellis's study (1986) was 34 Oregon home economics teachers, half of whom participated in a content area reading, writing, and mathematics strategies workshop. Following the workshop, participants used reading strategies significantly more than did a control group. Foster-Havercamp and Brown (1987) found that vocational students whose teachers had received inservice or coursework in reading methods improved slightly in overall reading ability and significantly in locating the main idea of a passage and using contextual clues. Further, the attitudes of the teachers toward teaching reading became more positive.

Conway (1980) developed a course to prepare home economics teachers to integrate the teaching of reading skills with teaching of subject matter content and assessed the effect of the course by observing the performance of six students from the course in their student teaching. The results indicated that such preparation can make a substantial and beneficial difference in the behavior of home economics teachers. It was recommended that such a course be required in teacher preparation curricula.

A growing number of preservice home economics education programs are including a course on teaching reading through the content area (Miller, 1986). Taught by reading faculty, the courses typically vary from 1-3 credit hours. Students learn how to analyze the reading difficulty of materials, structure experiences to enable pupils to read critically, and assist pupils with reading problems to overcome these difficulties. The roles of various reading resources in schools (e.g., the library, librarian, reading teacher, and reading specialist) are also explored.

Other basic skills activities included in home economics preservice teacher education programs include requiring student basic skills competency before admission to the teacher education program, introducing students to home economics materials developed to reinforce basic skills, emphasizing basic skills in curriculum development assignments, requiring courses/workshops on teaching basic skills (sometimes team taught by home economics education and mathematics or science education faculty), and including a reading practicum as part of the student teaching experience. In some programs, students are introduced to the basic skills concern by having them review recent reports on the quality of education in the United States (e.g., *A Nation at Risk*, 1983; *The Unfinished Agenda*, *The Role of Vocational Education in the High School*, 1984) and discuss how home economics could address report recommendations (Miller, 1986).

## Academic Credit for Home Economics Classes

As there has been a renewed concern for basic skills education and, in response, states have raised graduation credit requirements in traditional academic disciplines, there has also been a movement to allow academic credit for vocational education classes that reinforce basic skills content to a high degree. In *The Unfinished Agenda, The Role of Vocational Education in the High School* (1984), the National Commission on Secondary Vocational Education wrote "Students should be allowed to satisfy some requirements for high school graduation—for example in the areas of mathematics, science, English, or social study—with selected courses in areas of vocational education that are comparable in the content coverage and vigor" (p.26).

In 1984, Mead, reporting on home economics curriculum trends, wrote that an "area that seems particularly appropriate to offer math and science credits is in foods and nutrition" (p. 40). Other examples include mathematics credit for consumer education and social science credit for family life studies. Peterat (1988) surveyed head state supervisors to determine the trend to grant academic credit through home economics. Twenty of the 48 supervisors who responded said their state could grant such credit. In 11 of these 20 states this was the result of a change in policy during the five previous years. Ten other states indicated such a policy change was under discussion. In an earlier paper, Peterat (1986) indicated that the following states reported developing curriculum and/or materials to support home economics as part of academic credit: Arizona (locally developed), California, Maine, New York, Ohio, Oklahoma, Oregon, Vermont (locally developed), Virginia, and Wyoming.

## SUMMARY

According to a number of reports on public school education in the United States, the nation's students are deficient in basic skills. Home economics can play a vital role in changing this, since it is an applied field where students can learn the value of basic skills through solving home and family related problems. Home economics teachers are interested in teaching the basic skills through their content area, and students who are in home economics classes in which basic skills are stressed improve in cognitive and social behavior.

In home economics basic skills instruction the goal is to reinforce student basic skills proficiencies. Steps include diagnosing student basic skill levels, identifying basic skills taught in one's program, teaching for basic skill development, and publicizing basic skills integration in home economics. Through preservice and inservice education teachers are learning these procedures, which are producing positive results for them and their students. A growing number of states are allowing academic credit for home economics courses that reinforce basic skills content to a high degree.

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**YOUR NOTES . . .**

19

# **PART II**

## **BASIC SKILLS ACTIVITIES**

The purpose of this publication is to help home economics teachers develop basic skills through their instruction. This part of the publication is divided into four sections, each dealing with a different major basic skill the authors believed was particularly relevant to home economics, i.e., communication, mathematics, physical and life science, and social studies.

Each section begins with an introduction to the use of the basic skill area in home economics, followed by student activities that can be used in teaching the skill. Within sections, activities are organized into the following content areas: consumer education/resource management, housing/home furnishings, human development, nutrition/foods, and textiles/clothing.

For each activity, the home economics content area, basic skill, and home economics application are indicated. The activities are examples of only some of the applications of integrating communication, mathematics, physical and life science, and social studies in home economics education.

Teachers should select and use those activities that seem most suitable for their classrooms. Further, teachers should feel free to modify or revise the materials to make them meet the needs and interests of their students.

Some of the activities have previously been published by the authors in funded project materials and curriculum guides. Others were developed or adapted specifically for this publication.

# COMMUNICATION



Cecelia K. Thompson  
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and  
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Home Economics Teacher Educator  
University of Arizona

Home economics has a body of knowledge and language that is learned through reading, writing, and speaking. Reading enables students to become informed about the world around them. Writing encourages students to organize thinking, clarify thoughts, summarize, and communicate with others. Speaking allows for emphasis of important points and feedback from other parties.

Comprehension of written material is a powerful tool that helps students discover a vast amount of information. One step in comprehension is understanding the meaning of unfamiliar words. A second is learning the structure of reading materials. Because information is presented in many different forms, students must learn to evaluate and use information in a variety of ways.

Writing about a subject to answer an essay question, compose an entry in a journal, or prepare a report helps students organize their thoughts and develop understanding about ideas. Many writing assignments simply require students to summarize information in their own way. Writing reports, letters, and memos, however, requires a more structured writing process. This process requires students to plan, draft, and revise until they are satisfied with a completed project.

Much knowledge is gathered and reinforced through spoken communication. Talking about a subject allows for immediate clarification as well as added emphasis of key points. Pronouncing new words and using them in classroom discussion stores the meanings in memory. Classroom discussion of new subjects and oral speaking assignments offer many opportunities for learning.

Home economics teachers have many opportunities to encourage students to improve reading, writing, and speaking skills. The following activities are a few examples of ways to improve these basic academic skills as you teach home economics.

## LIBRARY RESEARCH

Home Economics Content Area: Any Area

Basic Skill: Gather information from primary and secondary sources and write a report using this research.

Home Economics Application: Apply research techniques to a home economics problem/topic.

**Directions:** Choose a topic related to your class. Research it in the library and write a report. Before you go to the library to complete your home economics report, complete the following information.

What is the topic of your report? \_\_\_\_\_

Where might you find information about this topic?

	Yes	No
Books	_____	_____
Magazines	_____	_____
Newspapers	_____	_____
Interviews with adults	_____	_____

What do you already know about the topic?

What do you need to know about the topic?

While you are in the library, complete the following information. If you use a book, list the name of the book, the author, copyright date, and the publisher. If you use a magazine or newspaper, list the name of the magazine or newspaper, title of the article, name of the author, date of publication, and pages of the article. If you talk to an adult, list the name of the resource person and the date. Personal communication can be letters, memos, and telephone or face-to-face conversations.

### Books

Title: \_\_\_\_\_

Author: \_\_\_\_\_

Copyright Date: \_\_\_\_\_

Publisher: \_\_\_\_\_

## Magazines or Newspaper

Name of Publication: \_\_\_\_\_

Title of Article: \_\_\_\_\_

Author of Article: \_\_\_\_\_

Date of Publication: \_\_\_\_\_

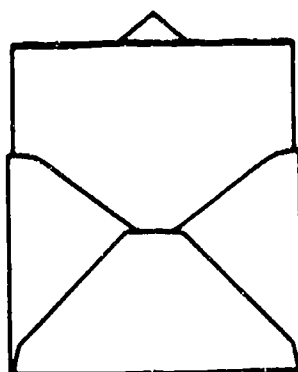
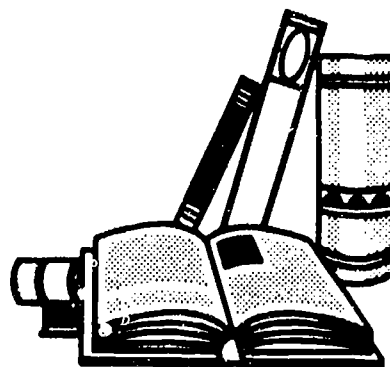
Page Number(s) of Article: \_\_\_\_\_

## Interviews or Personal Communications

Name of Person: \_\_\_\_\_

Date of Communication: \_\_\_\_\_

Type of Communication: \_\_\_\_\_



## MAPPING

Home Economics Content Area: Any Area

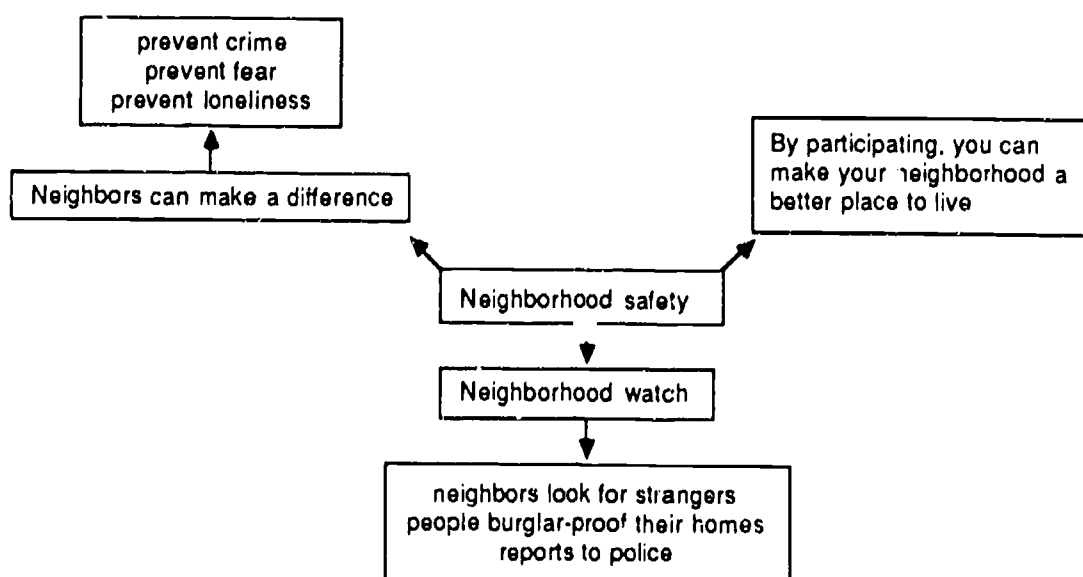
Basic Skill: Identify the main and subordinate ideas in a written work.

Home Economics Application: Identify the main and subordinate ideas in a home economics reading assignment.

Short maps or networks can represent important ideas and relationships in a reading. Links between the ideas can be expressed by arrows. Here is a passage from a book, followed by a map.

Everyone needs help sometime. Preventing crime, loneliness, and fear in your neighborhood is a way to help and show you care. Either informally or as part of an organized group, you can help make your neighborhood a better place to live.

Neighborhood Watch is a program of citizen involvement that discourages residential crime and may help prevent assault. In addition, it encourages neighbors to look out for the well being of one another. Through periodic meetings, people learn how to burglar-proof their own homes. They learn to look for suspicious activities, vehicles, and strangers. They also have a system to report quickly and accurately to the police. In this way, crime may be averted, help can be obtained fast, and the neighborhood is a safer place to live. (Duyff, Wichard, Hallman, & Reid, 1988, p. 127)



**Directions:** Map the central ideas in a reading assignment given you by your teacher. Start by writing the main idea of the reading in a box. Draw additional boxes for supporting ideas and connect them with arrows.

## VOCABULARY WORDS

Home Economics Content Area: Any area

Basic Skill: Use specialized vocabulary as appropriate to subject areas.

Home Economics Application: Use home economics vocabulary in writing.

**Directions:** Read material given to you by your teacher. On the lines below, list important vocabulary words from your reading.

Vocabulary Words

---

---

---

---

---

---

---

---

Using the words you have listed, write one of the following:

Newspaper advertisement

Poem

Shopping list

Letter

Diary entry

Rules for a game

Recipe instructions

**Note to teacher:** Select a reading assignment appropriate to an ongoing unit.

## WRITING A CHECK

Home Economics Content Area: Consumer Education/Resource Management

Basic Skills: Read and interpret information. Complete commonly used forms.


Home Economics Applications: Interpret information on a check. Write a check.

**Directions:** Describe the transaction completed with this check by answering the following questions:


When was this check written? \_\_\_\_\_

Who wrote the check? \_\_\_\_\_

Why was the check written? \_\_\_\_\_

	Billy Jo Mills	553
	114 Mockingbird Dr.	
	St. Louis, MO 10061	
	November 7	19 89
Pay to the Order of <u>Coats and Stuff</u>		\$ 89.40
<u>40</u> Eighty nine dollars and <u>100</u> Dollars		
Missouri State Bank		
Memo <u>Winter Coat</u>		<u>Billy Jo Mills</u>
61004982	77080002	

Now write check #554 to Buy-Mart for a pair of jeans priced at \$19.99 plus 5% state tax.

		
		19
Pay to the Order of <u> </u>		\$ <span style="border: 1px solid black; display: inline-block; width: 60px; height: 20px; vertical-align: middle;"> </span>
<u> </u> Dollars		
Missouri State Bank		
Memo <u> </u>		<u> </u>
61004982	77080002	

## CHILDREN'S NEEDS WORD SEARCH

Home Economics Content Area: Human Development

Basic Skill: Expand vocabulary related to subject areas.

Home Economics Application: Expand vocabulary related to human development.

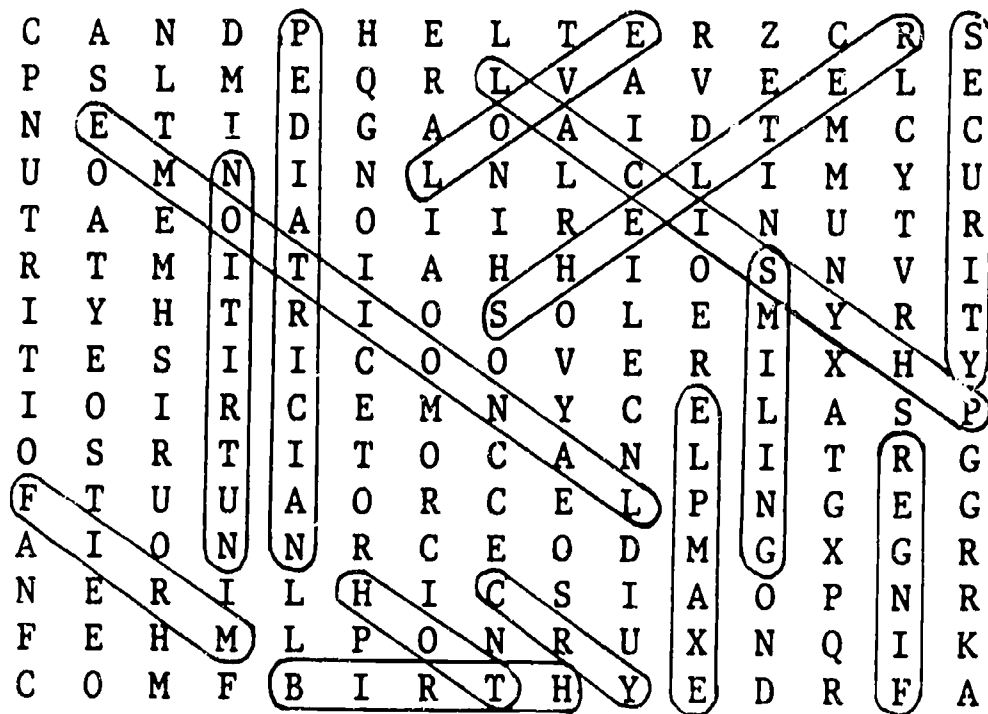
**Directions:** Fill in the blanks below, then circle those answers in the puzzle. The terms may be forward or backward; they may be vertical, horizontal, or diagonal.

1. A crib mattress should be \_\_\_\_\_
2. Babies gain a sense of \_\_\_\_\_ if naps, bedtime, and mealtime come at about the same time each day.
3. A woman's \_\_\_\_\_ before she becomes pregnant affects her children.
4. \_\_\_\_\_ is a basic physical need.
5. \_\_\_\_\_ is an emotional need usually provided by the family.
6. \_\_\_\_\_ indicates social development.
7. Children have mental, social, emotional, and \_\_\_\_\_ needs.
8. The needs that have to do with feelings are \_\_\_\_\_.
9. A doctor who specializes in caring for children is a \_\_\_\_\_.
10. A newborn baby's room should never be kept \_\_\_\_\_.
11. An appropriate type of food for toddlers is \_\_\_\_\_ food.
12. Setting a good \_\_\_\_\_ is the most effective way to help children learn appropriate behavior.
13. Babies sometimes \_\_\_\_\_ because they want to be held.

C	A	N	D	P	H	E	L	T	E	R	Z	C	R	S
P	S	L	M	E	Q	R	L	V	A	V	E	E	L	E
N	E	T	I	D	G	A	O	A	I	D	T	M	C	C
U	O	M	N	I	N	L	N	L	C	L	I	M	Y	U
T	A	E	O	A	O	I	I	R	E	I	N	U	T	R
R	T	M	I	T	I	A	H	H	I	O	S	N	V	I
I	Y	H	T	R	I	O	S	O	L	E	M	Y	R	T
T	E	S	I	I	C	O	O	V	E	R	I	X	H	Y
I	O	I	R	C	E	M	N	Y	C	E	L	A	S	P
O	S	R	T	I	T	O	C	A	N	L	I	T	R	G
F	T	U	U	A	O	R	C	E	L	P	N	G	E	G
A	I	O	N	N	R	E	O	D	M	G	X	G	R	
N	E	R	I	L	H	I	C	S	I	A	O	P	N	R
F	E	H	M	L	P	O	N	R	U	X	N	Q	I	K
C	O	M	F	B	I	R	T	H	Y	E	D	R	F	A

# Key for Children's Needs Word Search

- |              |                 |
|--------------|-----------------|
| 1. Firm      | 8. Emotional    |
| 2. Security  | 9. Pediatrician |
| 3. Nutrition | 10. Hot         |
| 4. Shelter   | 11. Finger      |
| 5. Love      | 12. Example     |
| 6. Smiling   | 13. Cry         |
| 7. Physical  | 14. Birth       |



## FACT OR OPINION?

Home Economics Content Area: Human Development

Basic Skill: Distinguish fact from opinion in media.

Home Economics Application: Distinguish fact from opinion in family-related materials.

**Directions:** Read the following newspaper article about teen pregnancy. Underline the facts listed in the article. Circle information that may present a personal opinion.

# *Report on teen sex urges birth control, efforts at education*

The Associated Press

WASHINGTON — An American teen-ager gives birth to a baby every two minutes, part of a pattern of unintended pregnancies and births that can best be countered with aggressive use of sex education and contraceptives, says a major report released Tuesday.

Dr. Daniel D. Federman of Harvard Medical School, chairman of the panel, told a news briefing that the problem of teen-age pregnancy cuts across all economic and ethnic groups. But special attention must be paid to youths from disadvantaged groups, he said.

"Teen pregnancies disproportionately occur in poor families and among children who do not do well in school," Federman said in an interview. "So we have to look at programs that address self-options, giving teen-agers the reason and motivation to do something with their lives and to act responsibly sexually."

The report said there is little evidence existing efforts to discourage teen-agers from engaging in sex are effective and no convincing data that the availability of contraceptive services encourages early sex.

"The panel believes that the major strategy for reducing early unintended pregnancy must be the encouragement of diligent contraceptive use by all sexually active teen-agers," concluded the 337-page report.

The study said about 1 million teen-age American girls become pregnant each year, with 470,000 giving birth and 400,000 obtaining abortions. About half the mothers are younger than 18 years of age.

In the United States, the teen-age pregnancy rate is higher than in other industrialized countries, even though the ages of starting sex and levels of sexual activity are comparable, the panel said. Sex education and contraception appear to be responsible for the difference, it added.

Along with birth control availability, the country also needs programs to encourage youths to delay sexual initiation and assume more responsibility for their actions, the report said.

The report drew immediate criticism from conservative groups opposed to public sex education and contraception for teen-agers.

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## NUTRITION WORDO

Home Economics Content Area: Nutrition/Foods

Basic Skill: Expand vocabulary.

Home Economics Application: Expand vocabulary related to nutrition.

**Directions:** On sheets of paper draw 25 blocks—5 across, 5 rows down. On each sheet print 25 vocabulary words at random, making each sheet arranged differently. Prepare a set of cards with the same words for the person who will call the game.

The caller reads each word aloud and spells it. Students cover each word with a small piece of cardboard as the word is called. When a student has covered five words across, down, or diagonally, s/he wins, and cries "Wordo!" The winner can then be the caller for the next game. To increase the difficulty of the game, call definitions instead of words.

W	O	R	D	O
protein	deficiency	roughage	calcium	sodium
potassium	carbohydrate	cellulose	rickets	cholesterol
nutrient	niacin	FREE	pellagra	riboflavin
thiamin	ascorbic acid	scurvy	vitamins	malnutrition
disease	iodine	phosphorous	iron	minerals

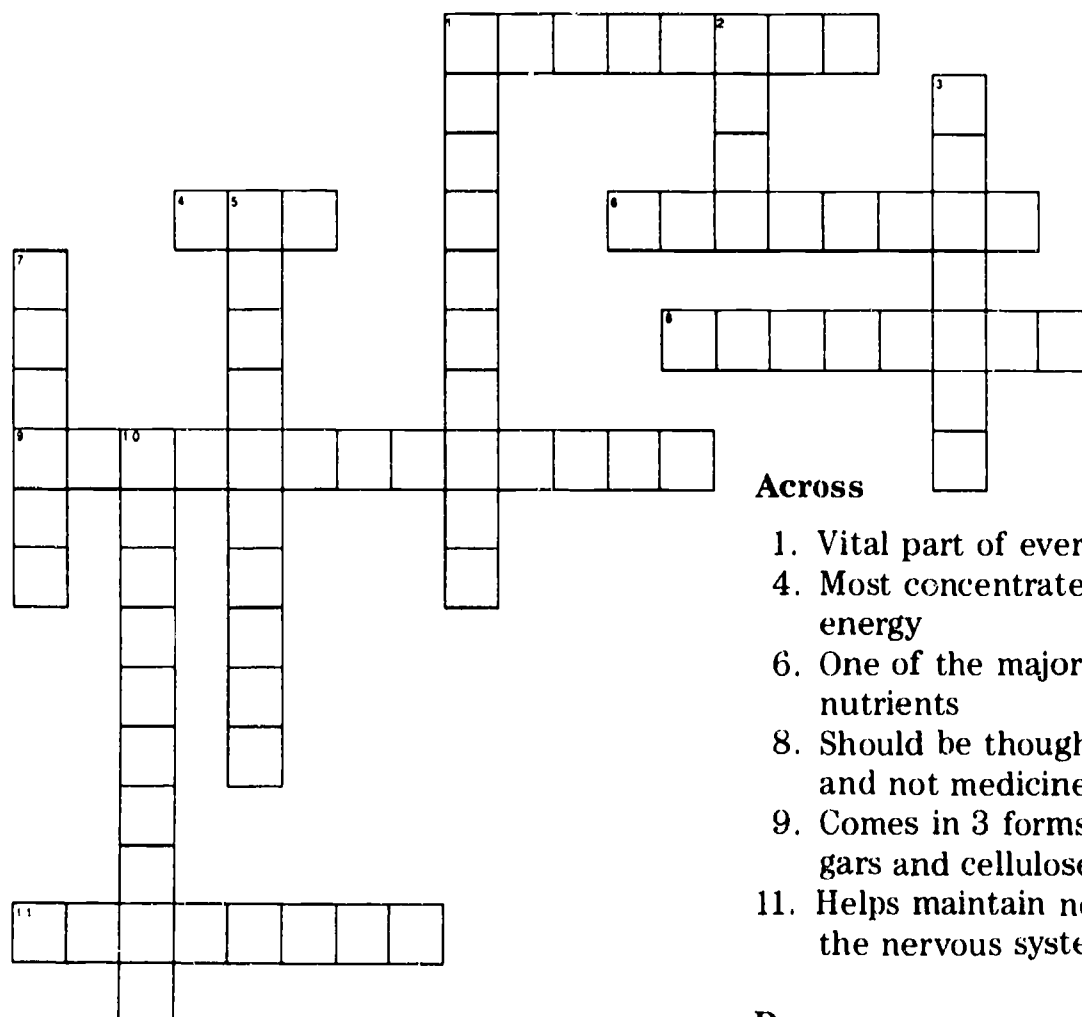
Adapted from: Kendall, E. L. & Chenoweth, R. (1980). *Do you read me? Service supplement: Reading development activities guide*. Cedar Lakes, WV: West Virginia State Vocational Curriculum Laboratory, S-42. (ERIC Document Reproduction Service No. ED 237 814)

## NUTRITION CROSSWORD PUZZLE

Home Economics Content Area: Nutrition/Foods

Basic Skills: Expand vocabulary and correctly spell words.

Home Economics Applications: Expand vocabulary. Spell correctly words related to nutrition.



### Across

1. Vital part of every cell
4. Most concentrated source of energy
6. One of the major groups of nutrients
8. Should be thought of as a nutrient and not medicine
9. Comes in 3 forms—starches, sugars and cellulose
11. Helps maintain normal function of the nervous system

### Down

1. Reacts with calcium to build strong bones and teeth
2. Helps make red blood cells
3. Mineral that helps build strong bones and teeth
5. Building blocks of protein
7. Helps keep skin, mouth, and tongue in good condition
10. Helps body release energy from food; found in meat, mushrooms, milk

### Puzzle Key

#### Across

1. proteins
4. fat
6. minerals
8. vitamins
9. carbohydrates
10. thiamine

#### Down

1. phosphorus
2. iron
3. calcium
5. amino acids
7. niacin
10. riboflavin

Adapted from: Kendall, E. L., & Chenoweth, R. (1980). *Do you read me? Service supplement: Reading development activities guide*. Cedar Lakes, WV: West Virginia State Vocational Curriculum Laboratory, S-45, SK-5. (ERIC Document Reproduction Service No. ED 237 814)

## COOKING TERMS CROSSWORD PUZZLE

Home Economics Content Area: Nutrition/Foods

Basic Skills: Expand vocabulary and correctly spell words.

Home Economics Applications: Expand vocabulary and correctly spell words related to food preparation.

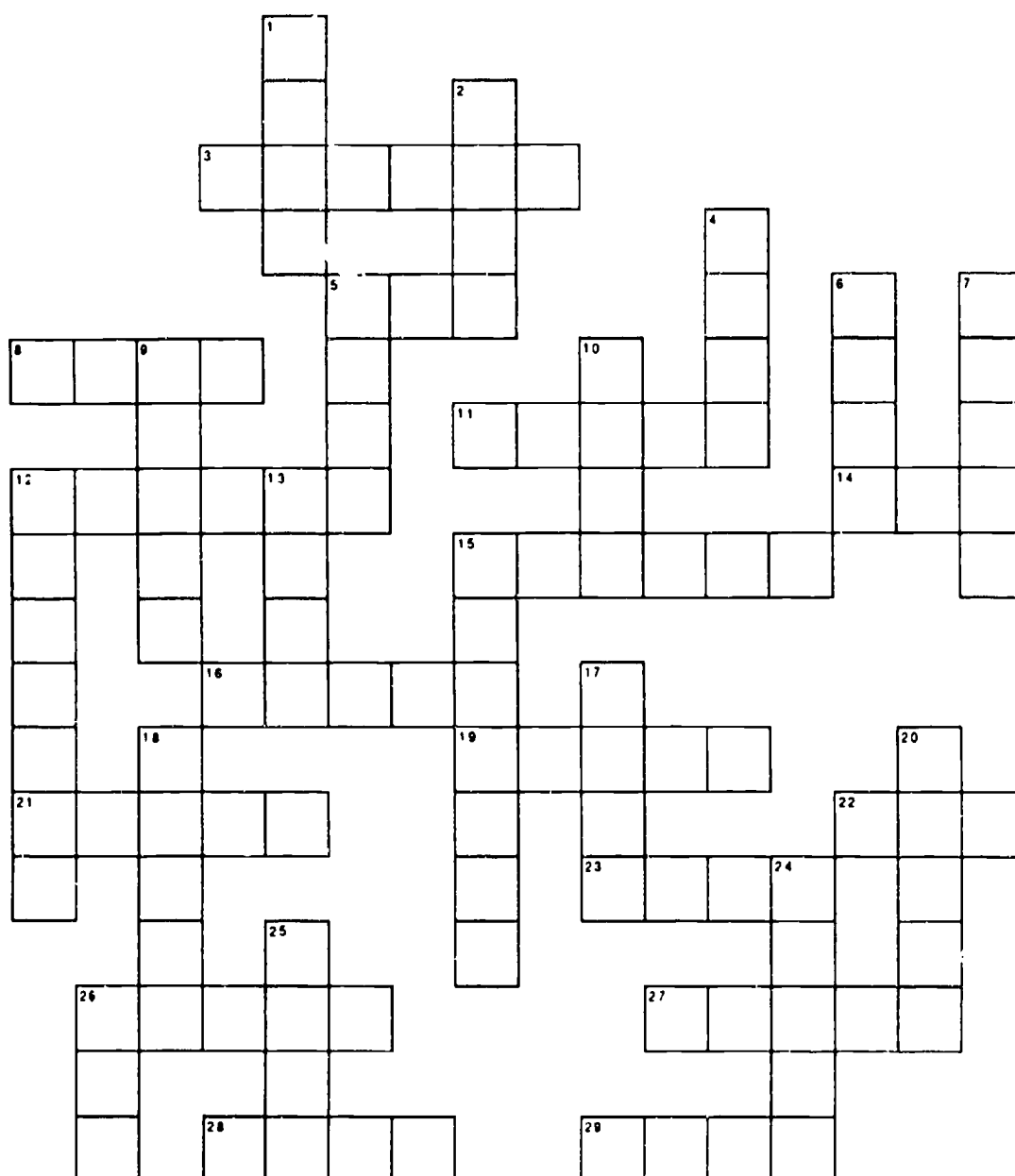
### Across

3. Cook in liquid over low heat so bubbles form slowly.
5. Put small pieces of one food on top of another, such as butter on pie filling.
8. Cook in the oven. 11. Place in the refrigerator to lower temperature.
12. Rub pan surface with fat to prevent sticking.
14. Take out the seeds.
15. Mix shortening with dry ingredients, using a pastry blender or two knives.
16. Beat until smooth, soft, and fluffy.
19. Mix the ingredients until smooth and uniform.
21. Cut into thin strips with a shredder.
22. Stir foods together.
23. Mix foods lightly.
26. Coat with powdered covering.
27. Rub on a food grater, breaking up food into very fine particles.
28. Remove outer skin.
29. Mix ingredients gently with a rubber spatula, whisk, or spoon.

### Down

1. Beat rapidly adding additional air.
2. Make liquid by heating.
4. Cook until liquid is so hot it bubbles hard.
5. Cut food into small cubes of same size and shape.
6. Cut food into pieces the size of peas with a knife or food chopper.
7. Pour or brush liquid over food while it cooks.
9. Fold, turn, and press dough with heel of hand.
10. Put dry ingredients through sifter or sieve.
12. Decorate finished dish with colorful food to make it look pretty.
13. Mix around and around with a spoon or fork.
15. Mix ingredients.
17. Make mixture smooth by mixing fast with beater or spoon.
18. Cook directly over coals or under heat in broiler.
20. Cut or finely chop food into tiny pieces.
24. Heat milk to just below boiling point.
25. Cut food into 6 sided pieces larger than  $\frac{1}{4}$  inch.
26. Cook in hot fat.

# COOKING TERMS PUZZLE



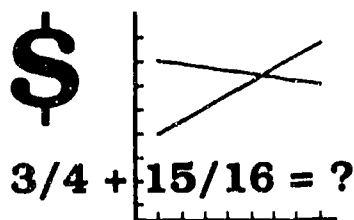
## ANSWER KEY

### Across

- |            |           |
|------------|-----------|
| 3. simmer  | 19. blend |
| 5. dot     | 21. shred |
| 8. bake    | 22. mix   |
| 11. chill  | 23. toss  |
| 12. grease | 26. flour |
| 14. pit    | 27. grate |
| 15. cut-in | 28. peel  |
| 16. cream  | 29. fold  |

### Down

- |             |             |
|-------------|-------------|
| 1. whip     | 13. stir    |
| 2. melt     | 15. combine |
| 4. boil     | 17. beat    |
| 5. dice     | 18. broil   |
| 6. chop     | 20. mince   |
| 7. baste    | 24. scald   |
| 9. knead    | 25. cube    |
| 10. sift    | 26. fry     |
| 12. garnish |             |



# MATHEMATICS

Helen C. Hall  
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and  
Sally K. Williams  
Home Economics Teacher Educator  
Iowa State University

Home economics education focuses on problems and decisions faced by individuals and families in everyday life. Solving some problems and making certain decisions depend upon or are enhanced by an individual's ability to accurately use mathematics skills. In a 1989 report from the National Council of Teachers of Mathematics, the mathematics goals for students included learning to reason and to solve problems mathematically.

Learning activities in home economics offer many opportunities for students to apply basic mathematics skills. Students may better understand the advantages to developing mathematics skills when they see the utility and application in everyday situations.

Teachers should help students understand that mathematics skills are tools. The tools will assist them in gathering data which will be useful in analyzing situations, making decisions, or solving problems (Williams and Parkhurst, 1988).

The activities in this section are only a few of the many examples in home economics in which mathematics skills are applied to situations faced daily by people in an ever changing world. Teachers are encouraged to develop other examples, to incorporate them in the lessons they teach, and to share mathematics skill objectives with the students. By doing, students will see value in learning mathematics and understand its relationship to home economics.

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Williams, S. K., & Parkhurst, C. C. (1988). Reasoned intellectual choice: Development of basic mathematical skills in home economics. *Journal of Vocational Home Economics Education*, 6(2), 14-22.

## CATALOG BUYING

Home Economics Content Area: Consumer Education/Resource Management

Basic Skills: Multiply and add whole numbers and decimals. Compute percentages.

Home Economics Application: Complete and analyze a catalog order.

**Directions:** Using the catalog order form answer the questions.

Item No.	Name of Item (1 or 2 words)	Letter(s)	Catalog Number	Letter(s)	Size (measure to be sure)	Color, Pattern Finish, Style, Etc.		Mono- gram Initials	How Many (pkg. ea., etc.)	Price For One (Pkg., ea., etc.)		Total Price	
						No. or Code	Name						
1	Denim Jeans	A	523-0792	E	30-W 32-L		Navy		1	32	00	32	00
2	Shirt	A	525-3760	D	M	29	Aqua		1	22	00	22	00
3	Running Shoes	A	936-6041	D	8	01	White/ Pink		1	29	99	29	99
4	Bath Towel	A	740-3850	C		5A	Seagrn		2	8	00	16	00
5	Bedsread	A	727-1216	A	Full				1	35	00	35	00
6	Coffee Maker	A	784-0705	A					1	34	99	34	00
MERCHANDISE TOTAL													
SALES TAXES (4%)													
TOTAL OF THIS ORDER													

- What is the total for the merchandise listed?
- Using the state sales tax rate listed, how much should be added to the order for the tax? \_\_\_\_\_
- What is the total of this order? \_\_\_\_\_
- How much would your total merchandise order (without tax) cost if your were given a 20% discount? \_\_\_\_\_
- If jeans were marked down 25%, how much would they cost? \_\_\_\_\_
- How much would 3 shirts in different colors cost? \_\_\_\_\_
- If running shoes were 1/2 off, how much would they cost? \_\_\_\_\_
- If bath towels were 1/3 off, how much would 2 cost? \_\_\_\_\_
- If bedsreads were marked down \$5 each by purchasing two items, what would 2 bedsreads cost? \_\_\_\_\_
- If the company was unable to ship the coffee maker, how much money for merchandise and tax should be returned to your? \_\_\_\_\_

NOTE: Shipping charges are often added to catalog orders.

Answers: 1. \$169.98; 2. \$6.80; 3. \$176.78; 4. \$135.98; 5. \$24.00; 6. \$66.00; 7. \$15.00; 8. \$10.67; 9. \$60.00; 10. \$36.39.

Adapted from: Hall, H. C. (Ed.). (1985). *Teaching strategies in reading, writing, and mathematics for home economics education*. Corvallis, OR: Oregon State University, 111.

## VACATION WITH FOREIGN CURRENCY

Home Economics Content Area: Consumer Education/Resource Management

Basic Skill: Calculate conversions between units within a system.

Home Economics Application: Calculate costs of a family holiday in the currency of another country.

Your family is planning a one week vacation in Jamaica. In preparation for this trip you are practicing conversion of U.S. dollars into Jamaican dollars. In January 1989, 1 U.S. dollar was equivalent to 5.32 Jamaican dollars; 40 U.S. dollars = 212.80 Jamaican dollars. (Note: A small fee may be charged when converting from one currency to another; the fee will not be considered when completing the exercises below.)

**Directions:** Calculate the following costs.

- \_\_\_\_\_ J\$ 1. You have saved \$50.00 to take with you on your vacation. How many Jamaican dollars will you receive when you exchange your money?
- \_\_\_\_\_ J\$ 2. Your hotel is approved to accept U.S. dollars. You give a clerk a \$10.00 U.S. bill to pay for a tee-shirt in the gift shop. If the tee-shirt tag reads 24.00J\$, how much change in Jamaican currency will you receive?
- \_\_\_\_\_ US\$ 3. You and your family stop for lunch at a restaurant in Kingston. You order a hamburger for 12.90J\$, French fries for 5.50, and a cola for 3.00. You are shocked at the bill until you realize that you are paying in Jamaican dollars. How much would your lunch cost in U.S. dollars?
- \_\_\_\_\_ US\$ 4. Your parents are paying the hotel bill. Posted on the back of the door are the rates. The room as a single is \$60.00 per night plus 10% tax. Calculate what you would pay if you were staying in the room for three nights by yourself. Convert to Jamaican dollars.
- \_\_\_\_\_ J\$
- \_\_\_\_\_ 5. When your vacation is over, you have 9.31J\$ remaining. At the airport you convert this back to U.S. dollars. How much should you receive?

Select a country, identify the currency used in that country, and determine the current rate of exchange. Request the information from the local bank or refer to a foreign exchange chart that is found regularly in the business or market section of some newspapers. An example chart appears below. Answer the following questions:

1. What country will you visit? \_\_\_\_\_
2. What is the currency of that country? \_\_\_\_\_
3. What is the exchange rate for \$1.00 in the currency of that country? \_\_\_\_\_
4. How much money in the currency of the country selected will you receive when you convert \$150? \_\_\_\_\_

<b>THE DOLLAR</b>				
	Foreign currency per dollar			
N.Y. rates (3 p.m.)	Wed.	Mon.	6 mo. ago	Yr. ago
<b>Australian dollar</b>	<b>1.3000</b>	<b>1.3148</b>	<b>1.1481</b>	<b>1.2583</b>
Belgian franc <sup>1</sup>	40.00	40.53	37.19	38.14
<b>Braz. cruzado (new)</b>	<b>1.7390</b>	<b>1.5190</b>	<b>783.23</b>	<b>195.11</b>
British pound	0.6158*	0.6339	0.5526	0.5836
<b>Canadian dollar</b>	<b>1.1900</b>	<b>1.1963</b>	<b>1.1922</b>	<b>1.2060</b>
Dutch guilder	2.1540	2.1815	2.0175	2.0535
<b>French franc</b>	<b>6.4910</b>	<b>6.5680</b>	<b>6.1025</b>	<b>6.1340</b>
Greek drachma	163.10	166.70	147.20	145.00
<b>Hong Kong dollar</b>	<b>7.7960</b>	<b>7.7978</b>	<b>7.8070</b>	<b>7.8150</b>
Irish punt	0.7111	0.7283	0.6586	0.6793
<b>Israeli shekel</b>	<b>1.9600</b>	<b>1.9900</b>	<b>1.5955</b>	<b>1.6240</b>
Italian lira	138.30	142.50	1313.75	1351.00
<b>Japanese yen</b>	<b>138.67</b>	<b>141.10</b>	<b>124.70</b>	<b>133.60</b>
Mexican peso <sup>2</sup>	2504.00	2504.00	2280.00	2290.00
<b>Norwegian krone</b>	<b>7.0050</b>	<b>7.0766</b>	<b>6.5850</b>	<b>6.6379</b>
Portugese escudo	158.40	161.90	146.00	149.00
<b>Singapore dollar</b>	<b>1.9635</b>	<b>1.9625</b>	<b>1.9400</b>	<b>2.0490</b>
South Korean won	664.50	664.70	684.00	725.00
<b>Spanish peseta</b>	<b>120.75</b>	<b>122.20</b>	<b>113.10</b>	<b>121.30</b>
Swedish krona	6.5110	6.5840	6.1400	6.2800
<b>Swiss franc</b>	<b>1.6135</b>	<b>1.6545</b>	<b>1.5165</b>	<b>1.5140</b>
Taiwan dollar	25.67	25.72	28.17	28.85
<b>West German mark</b>	<b>1.8865</b>	<b>1.9280</b>	<b>1.7842</b>	<b>1.8225</b>
Morgan Gny. indx <sup>3</sup>	91.9	93.2	86.9	89.7

Source: First American Bank of New York 1-commercial rate; 2-floating rate; 3-dollar vs. group of key currencies

\*cost of one pound: \$1.6240

USA Today, July 6, 1989

Answers: 1. 266; 2. 29.20; 3. 4.02; 4. 198, 1053.36; 5. 1.75

## TARGET HEART RATE

Home Economics Content Area: Human Development

Basic Skill: Add, subtract, and multiply whole numbers and decimals.

Home Economics Application: Compute target heart rate for exercise intensity level.

It has been proven that maintaining your heart rate at your target heart rate for 20 minutes three times a week will improve your cardiovascular system (strengthen your heart muscles).

**Directions:** Compute your target heart rate using the formula below. Then do aerobic exercises or jog for a minimum of 20 minutes or until your pulse is at the target rate. (You should be able to carry on a conversation while jogging.)

### Formula for Target Heart Rate

1.  $\frac{220}{-}$  your age  
equals your assumed maximum heart rate
2.  $\frac{-}{-}$  your own resting heart rate (Take your pulse for *one* minute while still in bed after a restful night's sleep.)  
your heart rate range
3.  $\frac{\times}{-}$  multiply by .60, .70, or .80 (% of exercise intensity)  
.60 = little or no daily exercise  
.70 = moderate daily exercise  
.80 = considerable daily exercise
4.  $\frac{+}{-}$  your resting heart rate  
This answer is your target heart rate.

To do a 10 second TARGET HEART RATE check, divide your target heart rate by 6. Your 10 second TARGET HEART RATE is \_\_\_\_\_.

### Example

220	
- 17	age
203	assumed maximum heart rate
- 72	resting heart rate
131	heart rate range
× .70	% of intensity
91.7	
+ 72	resting heart rate
163.7	TARGET HEART RATE

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Adapted from: Hall, H. C. (Ed.) (1985). *Teaching strategies in reading, writing, and mathematics for home economics education*. Corvallis, OR: Oregon State University, 110.

# COST OF RAISING A CHILD: THE FIRST YEAR

Home Economics Content Area: Human Development

Basic Skill: Add whole numbers and decimals.

Home Economics Application: Compute costs of having a baby and caring for it the first year.

**Directions:** Research first year costs of having a baby. Get information from a doctor, hospital, new mother, classified ads, garage sales, and stores. Your teacher will ask you to work individually or in small groups on subsections.

Purchase Description	Cost
<b>Medical Expenses</b>	
Natural childbirth classes	_____
Midwife or obstetrician	_____
Pediatrician (at time of birth)	_____
Hospital or birthing center (delivery room, nursery, lab, medical supplies, etc.)	_____
Pediatrician (routine and illness-related visits)	_____
Medical insurance	_____
Vitamins (pre-natal, post-natal, baby)	_____
A - Subtotal	_____
<b>Maternity Clothes</b>	
5 slacks or skirts, 5 tops	_____
Underwear (hose, bras, slips)	_____
3 dresses	_____
B - Subtotal	_____
<b>Nursery Furniture</b>	
Crib and mattress	_____
*Bathing/dressing table	_____
Dressing/chest of drawers	_____
*Stroller	_____
*High chair	_____
*Bassinet	_____
C - Subtotal	_____
<b>Nursery Items</b>	
Lamp/night light	_____
Mattress cover/pad	_____
Diaper pail	_____
*Diaper stacker	_____
*Comforter	_____
*Bed skirt	_____
*Rocking chair	_____
*Bumper pads	_____
D - Subtotal	_____

\* These items would be nice to have but not a necessity.

**Layette**

5 receiving blankets  
3 sheets  
6 washcloths  
4 towels  
Sleepwear (6 sleepers, 2-3 gowns)  
2 play suits  
5 bibs  
4 pairs booties  
Diapers  
4 tee-shirts  
Diapers  
4 tee-shirts  
Plastic pants  
\*Lap pads  
\*Cap/hat/bonnet

E - Subtotal

**Baby Care**

Formula  
\*Bottle sterilizer  
\*Bottle warmer  
Bottles  
\*Breast pump  
Baby food  
\*Plate (warmer)  
1 fork, 2 spoons  
Thermometer (rectal)  
\*Hot water bottle  
Diaper bag  
Comb and brush  
Baby oil, soap, pins, etc.  
\*Baby wipes  
Syringe (nose bulb)  
\*Bath tub  
Pacifier  
Infant car seat  
\*Walker  
\*Playpen  
\*Infant carryall seat  
\*Swing  
\*Pictures from hospital  
\*Mobile  
\*Baby book

F - Subtotal

**Miscellaneous**

Day care/baby sitter  
\*Toys  
\*Professional photos

G - Subtotal

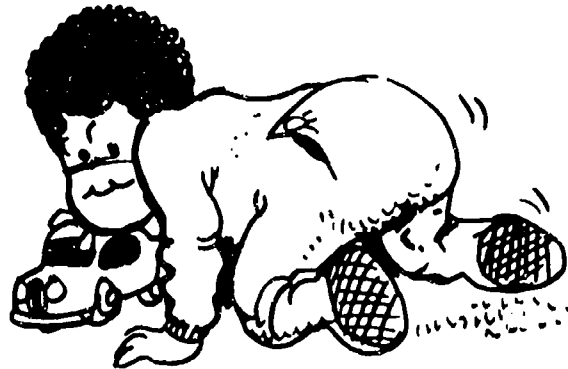
## Summary

To find the total cost of having a baby and caring for it the first year, total the subtotals from the previous pages.

Medical Costs	A - Subtotal	_____
Maternity Clothes	B - Subtotal	_____
Nursery Furnitures	C - Subtotal	_____
Nursery Items	D - Subtotal	_____
Layette	E - Subtotal	_____
Baby Care	F - Subtotal	_____
Miscellaneous	G - Total	_____
	TOTAL EXPENSES	_____

### Follow-up:

1. Discuss what expenses could be eliminated or reduced.
2. Research and estimate costs of raising a child from 1 year to 18 years or through college.



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Adapted from: Hall, H. C. (Ed.). (1985). *Teaching strategies in reading, writing, and mathematics for home economics education*. Corvallis, OR: Oregon State University, 105-107.

## MALNUTRITION IN THE WORLD

Home Economics Content Area: Nutrition/Foods

Basic Skill: Calculate numbers using percentages.

Home Economics Application: Determine how many people in a population would get less food than needed if their community were representative of world figures.

An estimate has been made that of every 100 people in the world, 22% are undernourished, 11% are severely malnourished, and 1% would die from starvation (Global Perspectives in Education, 1982).

Pretend that your school and community are representative of the global situation. Get the population figures for your community and the numbers of teachers and students in your school.

Using the estimated percentages from the information above, compute the following:

- \_\_\_\_\_ 1. How many people in your city or community would be undernourished?
- \_\_\_\_\_ 2. How many people would be severely malnourished?
- \_\_\_\_\_ 3. How many people would be likely to die from starvation this year in your community?
- \_\_\_\_\_ 4. How many students in your school would be undernourished?
- \_\_\_\_\_ 5. How many students would be severely malnourished?
- \_\_\_\_\_ 6. How many students would be likely to die from starvation this year in your school?
- \_\_\_\_\_ 7. How many people in your community would not be among the undernourished, malnourished, or starving?
- \_\_\_\_\_ 8. How many students would not be among the undernourished, malnourished, or starving?
- \_\_\_\_\_ 9. If you have 10 very close friends, how many would be under-nourished if they were representative of the world situation?

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Global perspectives in education. (1982). Teaching against hunger. *Intercom*, 2. New York, NY: Author.

## UNIT PRICING

Home Economics Content Area: Nutrition/Foods

Basic Skill: Compute cost of items per unit of measure.

Home Economics Application: Select the best food buy by comparing the unitcost of items.

Unit prices tell the cost of an item per ounce, pound, or some other unit of measure. Wise buyers figure which purchases are cheapest by finding the unit cost for each item.

Unit price = Cost of item divided by number of units.

Example: A  $\frac{1}{2}$  gallon (64 ounces) container of ice cream costs \$2.39.

Find the unit price. Note: Round off answers to the nearest cent.

Unit price = \$2.39 divided by 64 ounces = \$.037 per ounce or \$.04

Unit price—\$.04 per ounce

**Directions:** Compute the cost of a single unit of each item below.

1.	3 pounds onions	\$1.17	_____
2.	4 peaches	.92	_____
3.	12 packages gum	1.08	_____
4.	3 pounds ground beef	2.67	_____
5.	1 dozen cookies	1.80	_____
6.	18 oz. jar peanut butter	1.69	_____
7.	1 lb. box spaghetti	.69	_____
8.	24 oz. jar mustard	.99	_____
9.	16 oz. can green beans	.49	_____
10.	12 oz. package cheese slices	2.09	_____

When products are available in more than one size, the buyer may calculate the unit cost of each size of each item.

Example:

A 10-ounce jar of jelly costs \$.89. A 32-ounce jar of jelly costs \$2.40. Which is the best buy?

Unit price = Cost of item divided by number of units

\$.89 divided by 10 ounces = .089 or \$.09 per ounce

\$2.40 divided by 32 ounces = .075 per ounce or \$.08

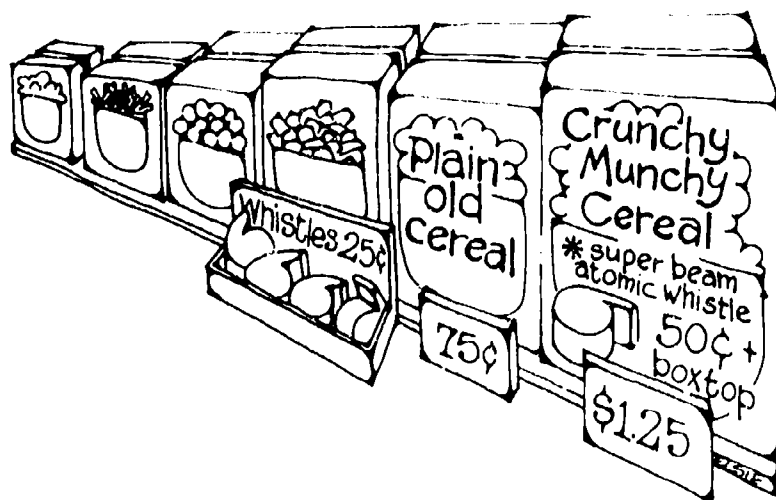
The larger jar is the best buy at \$.08 per ounce.

**Directions:** Find the best buy of each item below. The larger size of an item may not always be the best buy. Write "smaller" or "larger" in the blank spaces to indicate which is the best buy.

Item	Smaller	Cost	Larger	Cost	Answer
11. Rice	2.26 oz.	\$1.19	5.1 oz.	\$1.08	_____
12. Peaches	16 oz.	.46	29 oz.	.87	_____
13. Cereal	10 oz.	.71	15 oz.	.99	_____
14. Mayonnaise	8 oz.	.89	16 oz.	.46	_____
15. Flour	2 lb.	.59	5 lb.	1.08	_____
16. Soup	10.5 oz.	.79	13.5 oz.	.99	_____
17. Oranges	6	.55	10	.99	_____
18. Pears	4	1.00	5	1.10	_____
19. Juice	40 fluid oz.	1.15	64 fluid oz.	.75	_____
20. Tuna	6 1/2 oz.	.88	12 oz.	1.85	_____

Answers:

- |              |                           |
|--------------|---------------------------|
| 1. \$.39     | 11. \$.53, \$.21, larger  |
| 2. \$.23     | 12. \$.03, \$.03, same    |
| 3. \$.09     | 13. \$.07, \$.08, smaller |
| 4. \$.89     | 14. \$.11, \$.03, larger  |
| 5. \$.15     | 15. \$.30, \$.22, larger  |
| 6. \$.09/oz. | 16. \$.08, \$.07, larger  |
| 7. \$.04/oz. | 17. \$.09, \$.10, smaller |
| 8. \$.04/oz. | 18. \$.25, \$.22, larger  |
| 9. \$.03/oz. | 19. \$.03, \$.01, larger  |
| 10. \$.17/oz | 20. \$.14, \$.15, smaller |



## PHYSICAL ACTIVITY AND WEIGHT CHANGE

Home Economics Content Area: Nutrition/Foods

Basic Skills: Read charts. Multiply and divide whole numbers and decimals.

Home Economics Application: Calculate calories burned through exercise and activity.

One of the dietary guidelines for Americans is to "maintain desirable weight." Alexandra has determined her desirable body weight by consulting the table in the pamphlet, *Dietary Guidelines for Americans*. Alexandra is 5'4" tall. The table tells Alexandra that for a person this tall the desirable weight is between 110 and 142 pounds. Since Alexandra is 18 years old, and the table is designed for people 25 years and older, she subtracts 7 pounds (1 pound for each year under 25). Thus, the desirable weight range for Alexandra is 103-136. Alexandra is of medium build. She, therefore, estimates that her desirable weight is approximately 120 pounds, the middle point of the suggested range. Alexandra currently weighs 127 pounds.

The dietitian whom Alexandra consulted, after gaining approval from her family physician to lose weight, said that safe weight loss should be limited to 1 to 2 pounds per week. Alexandra, therefore, has decided to try to lose the 7 pounds in 6 weeks, in time for the senior prom. Since Alexandra is currently eating a balanced diet, she has decided that she will try to lose the weight by gradually increasing her daily physical activity. Alexandra requests your help in developing her exercise plan.

Generally to lose one pound a week, a person must either decrease calorie intake by about 500 calories a day or burn up those 500 calories by increasing physical activity.

**Directions:** Answer the following questions.

- \_\_\_\_ 1. To lose one pound per week, Alexandra will need to increase her physical activity to burn up how many calories during each week?
- \_\_\_\_ 2. How many total calories will Alexandra need to burn up through her exercise program during the 6 weeks to lose 7 pounds.
- \_\_\_\_ 3. Assume Alexandra is eating a balanced diet which supplies her with calories sufficient to maintain her desired weight. Use the following chart of calories burned per 10 minutes of activity and calculate how many hours each week Alexandra would need to spend in the activities listed below to lose her goal of 7 pounds in 6 weeks.

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U. S. Department of Agriculture and U. S. Department of Health and Human Services. *Dietary Guidelines for Americans*. (1985). Home and Garden Bulletin 232, U. S. Government Printing Office: Order No 1987-193-811.

**Example:**

A person weighing 125 pounds burns 60 calories in 10 minutes of chopping wood. Per hour this would be  $60 \times 6 = 360$  calories. Total hours of chopping wood necessary for Alexandra to lose her 7 pounds is  $24,500/360 = 68.06$  hours. The number of hours Alexandra would need to spend each week chopping wood would be  $68.06 \text{ hours}/6 \text{ weeks} = 11.34$  hours per week.

- a. dusting \_\_\_\_\_
- b. cycling \_\_\_\_\_
- c. Vigorous dancing \_\_\_\_\_

**Supplemental Activity:**

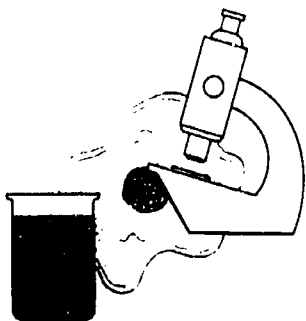
Since Alexandra may not enjoy losing her 7 pounds by participating in only one activity, plan a 6 week exercise program for her. List activities you think she would enjoy. Show how she would spread the activities over 6 weeks. Calculate the minutes required for each activity and the number of calories burned.

**Calories burned per 10 minutes of activity\***

ACTIVITY	BODY WEIGHT		
	125 lbs.	175 lbs.	250 lbs.
<b>PERSONAL NECESSITIES</b>			
Sleeping	10	14	20
Sitting (watching TV)	10	14	18
Sitting (talking)	15	21	30
Dressing or washing	26	37	53
Standing	12	16	24
<b>LOCOMOTION</b>			
Walking upstairs	146	202	288
Walking at 4 mph	52	72	102
Running at 7 mph	118	164	232
Cycling at 13 mph	89	124	178
<b>HOUSEWORK</b>			
Making beds	32	46	65
Dusting	22	31	44
Shoveling snow	65	89	130
Mowing grass (power)	34	47	67
<b>SEDENTARY OCCUPATION</b>			
Sitting writing	15	21	30
Standing light activity	20	28	40
<b>WORK</b>			
Assembly line	20	28	40
House painting	29	40	58
Chopping wood	60	84	121
<b>RECREATION</b>			
Baseball	39	54	78
Basketball	58	82	117
Bowling (nonstop)	56	78	111
Dancing (vigorous)	48	66	94
Golfing	33	48	68
Horseback riding	56	78	112
Ping-Pong	32	45	64
Racquetball	75	104	144
Skiing (Alpine)	80	112	160
Skiing (water)	60	88	130
Skiing (cross country)	98	138	194
Swimming (crawl)	40	56	80
Tennis	56	80	115

\*Source: Iowa Methodist Nutrition Center

Answers: 1. 3,500; 2. 24,500; 3a.  $22 \times 6 = 132$  calories per hour;  $24,500/132 = 185.6$  hours in six weeks,  $185.6/6 = 30.9$  hours per week; 3b.  $89 \times 6 = 534$  calories per hour,  $24,500/534 = 45.9$  hours in six weeks,  $45.9/6 = 7.65$  hours per week; 3c.  $48 \times 6 = 288$  calories per hour,  $24,500/288 = 85$  hours in six weeks,  $85/6 = 14.2$  hours per week.



# PHYSICAL AND LIFE SCIENCE

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Home Economics is deeply rooted in physical and life science. As an integral part of the educational system, home economics programs can bring to life the theories, principles, and skills students learn in their science classes as they apply them to everyday living situations.

Teachers are encouraged to develop partnerships with science teachers as they borrow textbooks and equipment and identify science principles applied in various home economics courses. This will strengthen both programs.

The activities and experiments in this section are designed to teach physical and life science concepts and principles in the context of home economics. The activities are designed to be incorporated in unit plans to aid both teachers and students in applying science principles in home economics.

Most of the activities are designed as handouts which can be duplicated and distributed to students. Feel free to adapt, modify, or revise materials to meet the needs and interests of the students. Some of the activities may need to be set up by the teacher while others can be set up by students.

As a motivational approach, introduce the idea of science in the home economics classes at the beginning of the course by acting the part of the "Mad Scientist." Obtain a lab coat and some science equipment, and develop a couple of short science/home economics activities. For example, dry ice used in making homemade root beer (See Making Root Beer with Dry Ice activity) can increase the interest level of the students. Another idea may be to demonstrate the effect of baking soda in certain liquids (See Baking Soda Reactions in Liquids activity). To introduce these activities, play "Weird Science" from the tape Oingo Boingo by Dead Man's Party. The tape was produced in 1986 by MCA Records.

As teachers practice identifying science concepts in home economics curricula, it will increase their ability to assist students in the application process. Try it and see how students transfer their learning from the classroom to the real world.

## WHAT IS THE RING AROUND THE BATHTUB?

Home Economics Content Area: Housing/Home Furnishings

Basic Skill: Make inferences from data gathered in an experiment.

Home Economics Application: Understand the effects of pH and water hardness on the potential cleaning action of soaps and detergents.

### Supplies Needed:

For each experiment station:

- 5 pieces blue litmus paper
- 5 pieces red litmus paper
- 10 beakers or plastic cups
- 10 stirring rods or teaspoons
- 1 cup of each water sample listed below
- 1 teaspoon soap, e.g. Ivory Snow
- 1/2 teaspoon detergent
- Measuring spoons or balance scales
- 1 sheet white paper

For total class:

- 6 quarts distilled water
- 1  $\frac{2}{3}$  tablespoons sodium bicarbonate (baking soda)
- 2 cups white vinegar
- 1  $\frac{1}{2}$  teaspoons water softener
- 1  $\frac{1}{2}$  quarts hard water
- 5 1-gallon containers

Mix the following water samples in gallon containers and label:

Container A—1  $\frac{1}{2}$  quarts distilled water and 1  $\frac{2}{3}$  tablespoon sodium bicarbonate. Stir to dissolve. (Basic)

Container B—1  $\frac{1}{2}$  quarts distilled water and 2 cups white vinegar. Mix thoroughly. (Acidic)

Container C—1  $\frac{1}{2}$  quarts distilled water and 1  $\frac{1}{2}$  teaspoons water softener. Stir to dissolve. (Soft)

Container D—1  $\frac{1}{2}$  quarts distilled water. (Distilled)

Container E—1  $\frac{1}{2}$  quarts hard water. (Hard)

**Directions:** Set up a Water Data Chart as shown below to record the experiment information.

Water Data Center				
Water Sample	Part I Litmus Color	Part II	Part III	Part IV
Basic				
Acidic				
Soft				
Distilled				
Hard				

### Part I

- A. Label 5 beakers or cups to match the water samples. Collect  $\frac{1}{2}$  cup sample from each of the 5 1-gallon containers.
- B. Dip one end of red litmus paper in each water sample. Lay litmus paper on a blank sheet of white paper. Do the same with the blue litmus paper.
- C. Record color of litmus on the Water Data Chart under Part I.

### Part II

- A. Add  $\frac{1}{2}$  teaspoon soap to each beaker or cup.
- B. Stir vigorously.
- C. Record your observations on the Water Data Chart under Part II.

### Part III

- A. Add another  $\frac{1}{2}$  teaspoon soap to each beaker or cup and stir vigorously.
- B. Record your observations on the Water Data Chart under Part III.
- C. Set beakers or cups aside.

### Part IV

- A. Using 5 clean beakers or cups, collect 5 new  $\frac{1}{2}$  cup samples of water from the gallon containers and label them.
- B. Add  $\frac{1}{2}$  teaspoon detergent to each and stir vigorously.
- C. Record your observations on the Water Data Chart under Part IV.

Answer the following questions:

1. Make a general statement about how litmus paper changes in different water samples.
2. How did the soap react with the water in each sample? What happened when the amount of soap was doubled?
3. How does water purity affect the ability of soap to form suds?
4. What do you think would happen if the concentration of acid was increased in the acidic sample? What do you think would happen if the metal ions (Ca and Mg) were increased in the hard water sample?
5. How does the ability of detergent to form suds compare with soap?

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Adapted from: Smith, F. M., Hausafus, C. O., Hustoft, T., Jachimiak, H., Ramasike, M., & Petersen, K. (1988). *The chemistry of household cleaning. A science/home economics partnership*. Ames, IA: Iowa State University, 32-34.

## BE A GENETIC DETECTIVE

Home Economics Content Area: Human Development

Basic Skill: Gather and organize data.

Home Economics Application: Recognize that genetic information regarding physical characteristics is passed from one generation to another.

### Directions:

1. Choose three genetic traits to research. Examples of genetic traits are illustrated below.

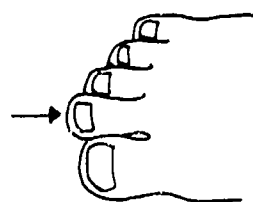
ability to roll the tongue

hair color

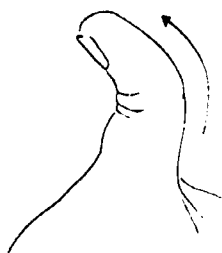
hair curl

eye color

Morton's Toe



hitchhiker's thumb



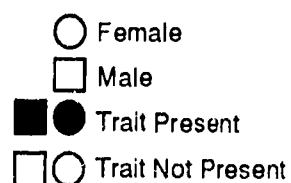
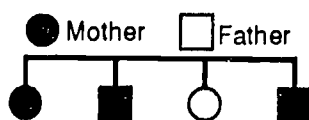
attached

earlobes

not attached



2. Collect genetic data on the traits selected from relatives by phone, in person, or by looking at photographs. If your relatives are not available, work with a friend in class or collect data from a neighbor. Collect data back as many generations as possible.
3. Develop a flow chart for each trait. Determine which traits seem to be dominant and which seem to be recessive. Which traits did you receive from your mother and which from your father?



4. Record your observations and conclusions.

## CARBOHYDRATES

Home Economics Content Area: Nutrition/Foods

Basics Skill: Use iodine as a qualitative test for carbohydrates.

Home Economics Application: Test foods for carbohydrates.

### Supplies Needed:

Tincture of iodine

Waxed paper

Small amount of flour

Small amount of sugar

Assortment of different foods:

Vegetables—lettuce (leaves), potatoes (tubers), carrots (roots), cucumbers (fruit parts),  
celery (stem), corn (seeds)

Fruits—orange, banana, apple

White bread

Milk

Egg white (hard cooked)

Rice (cooked)

Table of Food Composition

### Directions:

1. Measure out small amounts of sugar and flour and place on waxed paper. Slice or cut small samples of each food and place on waxed paper.
2. Place 1 or 2 drops of iodine on the sugar and the flour. Observe the color each sample turns. Record your observations.
3. Place 1 or 2 drops of iodine on other foods. Observe the color each food turns. Record your observations.
4. Draw conclusions about the kinds and amounts of carbohydrates in each food sample. Look at a food composition table and identify the amounts of carbohydrates in each food. Compare that information with the color changes you found in the experiment. Did all foods change color as expected? If not, why not?

**Note:** Remember that although both sugar and flour are carbohydrates, they will react differently.

## MAKING ROOT BEER WITH DRY ICE

Home Economics Content Area: Nutrition/Foods

Basic Skill: Observe a compound changing directly from a solid to a gaseous state (sublimation).

Home Economics Application: Understand principles of creating and maintaining carbonation in beverages.

### Supplies Needed:

1 bottle of root beer extract

Sugar and water (according to directions with extract)

1 pound dry ice for each gallon of liquid

Container which will hold more than the total amount of liquid, to allow for bubbling caused by dry ice.

**Directions:** Mix ingredients according to directions with root beer extract. Chill after mixing. Place in large container about 5 minutes before class starts. Add the dry ice. Watch the mixture bubble and mist like a brew. While mixture is "brewing," display small piece of dry ice and small piece of regular ice on saucers. Observe melting process of both.

**CAUTION:** DO NOT HANDLE DRY ICE WITHOUT GLOVES OR YOU WILL BURN THE SKIN. WHEN SERVING THE LIQUID, BE SURE NO PIECES OF DRY ICE GET IN THE CUPS.

Answer the following questions:

1. Discuss and compare differences in how dry ice and regular ice change states.
2. Discuss what happens when dry ice is added to a liquid.

## **BAKING SODA REACTIONS IN LIQUIDS**

Home Economics Content Area: Nutrition/Foods

Basic Skill: Observe neutralization reactions between acids and bases.

Home Economics Application: Recognize the effects of baking soda in different substances.

### **Supplies Needed:**

3 12-16 ounce glass pop bottles  
1 cup buttermilk  
3/4 cup cold water  
3 tablespoons baking soda

3 round balloons (all same size)  
1 cup cold water  
1/4 cup lemon juice  
Measuring spoons  
Funnel

**Directions:** Label the pop bottles #1, #2, and #3. Pour 1 cup cold water into #1. Pour 1 cup buttermilk into #2. Pour 3/4 cup cold water and 1/4 cup lemon juice into #3.

Add 1 tablespoon baking soda to bottle #1 and put the open end of the balloon over the bottle top. Carefully swish the mixture. Add 1 tablespoon baking soda to bottle #2 and quickly put the balloon over the bottle top. Then carefully swish the liquid to mix with the baking soda. Add 1 tablespoon baking soda to bottle #3 and quickly put balloon over top of bottle. Very carefully swish the liquid to mix with the baking soda.

**CAUTION:** BE VERY QUICK WITH THE BALLOONS OR THE BAKING SODA WILL REACT WITH THE ACID AND SHOOT OUT THE TOP OF THE BOTTLE.

Answer the following questions:

1. Why use an acid in recipes with baking soda?
2. What other natural agent beside baking soda could you use to produce the same effect in food?

## DIGESTION

Home Economics Content Area: Nutrition/Foods

Basic Skill: Understand that enzymes produced by the body break complex carbohydrates into simple sugars which can be readily absorbed as a source of energy.

Home Economics Application: Analyze enzyme and mechanical effects on carbohydrate foods.

### Supplies Needed:

1 small jar of banana baby food or banana pudding baby food  
6 soda crackers  
Tincture of iodine  
Waxed paper  
Small glass or plastic container with cover  
Teaspoon

### Directions:

1. Open the jar of baby food and spoon about half of it into a small container. Cover container and place in the refrigerator. Spit several times onto the surface of the remaining baby food before replacing the lid. Set the jar on the counter and leave it undisturbed until the next day.
2. Place one cracker on a piece of waxed paper. Put 1 or 2 drops of iodine on the cracker. Record the color.
3. Take a second cracker and place it in your mouth. Chew it 5 times and then spit it onto a piece of waxed paper. Put 1 or 2 drops of iodine on the chewed cracker and record your observation.
4. Chew a third cracker thoroughly, but do not swallow it. Spit it onto a piece of waxed paper and test it with the iodine. Record your observation.
5. Thoroughly chew a fourth cracker, but do not swallow it. Continue to chew without swallowing for four or more minutes, being sure mass is thoroughly mixed with saliva. Record any flavor change. Spit the cracker onto a piece of waxed paper and test with iodine. Record your observation.
6. Look into the jar of baby food that sat out overnight. Compare what you see with the baby food you stored in the refrigerator. Record your observation.
7. Study the record of your observations and draw conclusions about enzyme action, chewing, and digestion.

## MILK COOKERY

Home Economics Content Area: Nutrition/Foods

Basic Skill: Understand basic concepts regarding acids and enzymes.

Home Economics Application: Recognize the effects of acids and enzymes on milk products.

**Directions:** Make yogurt and cottage cheese using the recipes below. Describe the effects of acids on milk and draw conclusions. Draw conclusions about enzyme action on milk after making the cottage cheese and yogurt. Plan to use the yogurt and cottage cheese to make food items.

### Quick and Easy Yogurt

1½ teaspoon unflavored gelatin	1 teaspoon sugar
1½ cups nonfat dry milk powder	1½ tablespoons plain yogurt
1/2 cup plus ⅓ cup evaporated milk	

1. Soften gelatin by sprinkling it over 1½ teaspoons water. Let mixture soak 3 minutes or until it has absorbed the moisture and is translucent. The purpose of the gelatin is to give the yogurt a smooth texture and to make it thick. Do not exceed the amount of gelatin, since too much results in a rubbery and unpleasant product.
2. Add enough boiling water to the gelatin mixture to measure ½ cup. Add sugar. Stir, then let the mixture cool a bit.
3. Preheat the oven to about 275 degrees F.
4. While the mixture is still cooling and the oven is heating, begin to measure remaining ingredients. Mix nonfat dry milk powder with 1½ cups warm water and the gelatin mixture. Add yogurt. Stir mixture thoroughly.
5. Cover bowl with plastic wrap. Put in oven and turn oven off. Leave mixture overnight, or about 8 to 10 hours. This makes 1 quart plain, ready-to-eat yogurt.

### Cottage Cheese

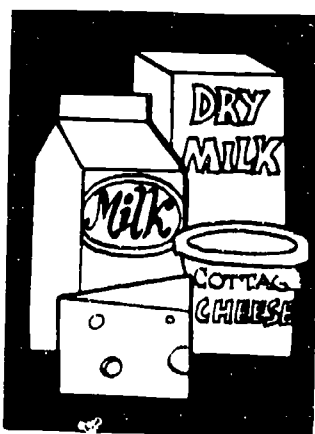
1 rennin tablet (junket)	1 tablespoon buttermilk
1 tablespoon water	2 tablespoons cream
2 cups milk	1/8 teaspoon salt

### Cottage Cheese (cont.)

1. Crush the rennin tablet and dissolve in the water.
2. Heat milk to 95 degrees F and stir in the rennin solution and the buttermilk. Allow the solution to stand at room temperature undisturbed for 20 minutes for clot to form.
3. Cut the clot in 1/2" cubes with a table knife.
4. Heat the curd slowly to 104 degrees F and hold at this temperature for 15 minutes. Stir at 5 minute intervals to equalize temperature.
5. Line a 1 quart colander or strainer with several thicknesses of cheesecloth. Pour the curds and whey into the colander and allow the whey to drain off. (Whey can be used in soups, sauces, or cooking cereal grains.)
6. When the whey is drained off, mix the curd with salt and cream. Use the cottage cheese to make food items or cool and eat.

Answer the following questions about your experiment.

1. Why is milk a solution and colloid?
2. Describe the changes that occur in the milk as it becomes yogurt. What causes the changes?
3. Describe changes that occur in the milk as it becomes cottage cheese. What causes the changes?
4. What factors could cause the yogurt and the cottage cheese experiment to fail? Explain why.



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**Note:** More information about the milk and science curriculum from which this activity was adapted may be obtained from Barbara J. Munns, 557 North 400 East, Centerville, UT 84014

## COMPARING NATURAL AND SYNTHETIC POLYMERS

Home Economics Content Area: Textiles/Clothing

Basic Skill: Make inferences from data gathered in an experiment.

Home Economics Application: Compare the properties (color, strength, and absorbency) of natural and synthetic fibers.

### Supplies Needed:

1½ cups lemon juice	12 styrofoam cups
3 cups liquid bleach	12 labels
Water	Medicine dropper
Cooking oil (few drops)	Rubber gloves
4 3" x 3" samples of each—natural fabrics: cotton, wool, linen; synthetic fabrics: nylon, polyester, acetate	

### Directions:

1. Line up 6 cups. Place a different type of fabric sample in each cup. Label each cup with the fabric name and "bleach." Carefully pour ½ cup of bleach into each cup.
2. Line up 6 more cups. Place a different type of fabric sample in each cup. Label each cup with the fabric name and "acid." Carefully pour ¼ cup of lemon juice into each cup.
3. Set the cups aside for 24 hours.
4. Set 1 sample of each fabric aside for later reference.
5. Using the last sample of each fabric, try to tear it. Record your observations.
6. Place a drop of water on each of the 6 samples of fabric used in Item 5. Note whether the water is absorbed. Repeat the process using a drop of oil. Record your observations.
7. After 24 hours carefully pour the liquids from the cups into the sink. Rinse the fabrics with water. Do not mix the fabrics from the two groups. Compare the fabrics from the two groups with the fabric samples you set aside. Record changes you observe in the fabrics.
8. Draw conclusions about natural and synthetic fabrics (polymers) and apply to the uses of each fabric.

## SPOT REMOVAL CHEMISTRY

Home Economics Content Area: Textiles/Clothing

Basic Skill: Observe and draw conclusions from data generated in an experiment.

Home Economics Application: Examine the relationship between (1) chemical properties, (2) heat, and (3) mechanical energy in the removal of oil-based stains in fabrics.

### Supplies Needed at Each Experiment Station:

- |   |                        |
|---|------------------------|
| 3 glass bowls the same size   | 1 set measuring spoons |
| Water   | 3 Popsicle sticks      |
| Liquid detergent  | Timer                  |
| Paper towels  |                        |
| 3 pieces of same fabric, stained with oil-based stain (may want to try several kinds of fabric) |                        |

**Directions:** Work through all three experiment stations which are set up in the room. Record your findings on the observation chart.

**Station A: Problem—**What effect does the temperature of water have on removal of oil-based grime?

Procedure:

1. Set out 3 bowls. In the first bowl put 1 cup cool water; in the second, 1 cup lukewarm water, and in the third, 1 cup hot water. Mix in 1 teaspoon detergent in each bowl.
2. Immerse one piece of oil-based-stained fabric in each bowl.
3. Swish each fabric with a Popsicle stick for 2 minutes.
4. Remove fabrics from bowls, squeeze out excess water, place flat on paper towels, and label each piece.
5. Examine fabrics and record problem, conditions, observations, and conclusions on chart. Describe any differences.

**Station B: Problem—**How does agitation affect the removal of oil-based grime?

Procedure:

1. Place 1 cup of lukewarm water in each of 3 bowls. Mix 1 teaspoon detergent in each bowl.
2. Immerse one piece of oil-based-stained fabric in each bowl.
3. In bowl #1, soak the fabric for 2 minutes. In bowl #2, squeeze fabric gently for 2 minutes. In bowl #3, swish fabric vigorously for 2 minutes.

4. Remove fabric from bowls and squeeze out excess water. Place fabric flat on paper towels and label each piece.
5. Examine fabrics. Record problem, conditions, observations, and conclusions on chart. Describe any differences.

**Station C: Problem—How does length of soaking time affect the removal of oil-based grime?**

Procedure:

1. Place 1 cup of room temperature water in each of 3 bowls. Mix 1 teaspoon detergent in each bowl.
2. Immerse one piece of oil-based-stained fabric in bowl #1 and soak for 3 minutes. Immerse one piece of oil-based-stained fabric in bowl #2 and soak for 6 minutes. Immerse one piece of oil-based-stained fabric in bowl #3 and soak for 9 minutes.
3. Remove fabrics from bowls, squeeze out excess water, place flat on paper towels, and label each piece.
4. Examine fabrics and record problem, conditions, observations, and conclusions on chart. Describe any differences.

OBSERVATIONS OF THE STUDENT SCIENTIST				
Station	Problem	Conditions	Observations	Conclusions
A				
B				
C				

Adapted from: Smith, F.M., Hausafus, C. O., Hustoft, T., Jachimiak, H., Ramasike, M., & Petersen, K. (1988). *The chemistry of household cleaning. A science/home economics partnership*. Ames, IA: Iowa State University, 57-58.



# SOCIAL STUDIES

Janis B. Van Buren  
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Home economics and social studies curricula share commonalities. Because of a rich heritage of social studies content in our courses, we may not recognize those concepts as skills basic to that discipline. With the current emphasis on basic skills, we must recognize social studies concepts and inform social studies teachers of the ways we teach these skills through applications to personal and family living.

The definition of social studies developed by the National Council for the Social Studies Task Force on Scope and Sequence (1984) reflects many of these similar elements. The definition is as follows :

Social studies is a basic subject of the K-12 curriculum that (1) derives goals from the nature of citizenship in a democratic society that is closely linked to other nations and peoples of the world; (2) draws its content primarily from history, the social sciences, and, in some respects, from the humanities and science; and (3) is taught in ways that reflect an awareness of the personal, social, and cultural experiences and developmental levels of learners. (p. 251)

Skills developed through being a responsible family member and a responsible citizen are the same: ability to think critically, recognize the importance of values and beliefs, and make well-reasoned decisions after gaining and processing information. Responsible family members and citizens must comprehend how their decisions influence other persons and society.

As technology speeds up world-wide communications, trade, and travel, we must recognize that we are a set of interrelated systems. This recognition occurs as global interdependency is tied to consumer education, nutrition, foods, textiles, clothing, and housing. Human diversity is seen when studying human development and family history.

The social studies activities presented illustrate some of the concepts previously mentioned. AS you try activities in your classes, emphasize their link to social studies in geography, history, government, and economics. Interact with social studies teachers to create in them awareness of what you are teaching. Volunteer to be a resource person for their classes and ask them to reciprocate.

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National Council for the Social Studies Task Force on Scope and Sequence. (1984). In search of a scope and sequence for social studies. *Social Education*, 84, 249-262.

## DEMAND AND PRICE RELATIONSHIPS

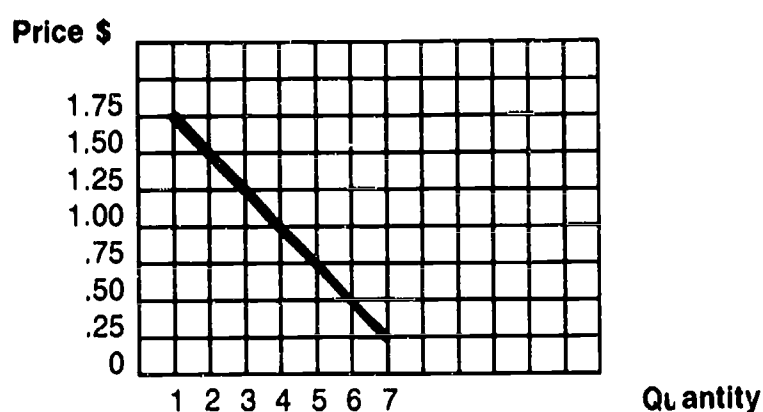
Home Economics Content Area: Consumer Education/Resource Management

Basic Skill: Read and interpret economic information on graphs.

Home Economics Application: Identify the relationships between price and demand for food products.

Economists often use graphs to illustrate their ideas. For example, demands for different goods are often graphed.

The following graph illustrates a hypothetical demand curve for chicken sandwiches. When graphing demand, price is put along the vertical axis and quantity along the horizontal axis. Examine the graph which illustrates the number of chicken sandwiches an average person buys per week at the prices shown on the graph. Answer the questions that follow, based upon the graphic information.



1. If the price of chicken sandwiches were \$1.25, how many would this person buy per week?  
\_\_\_\_\_
2. How many chicken sandwiches are demanded at the price of \$.50? \_\_\_\_\_
3. What is the quantity demanded at the price of \$1.75? \_\_\_\_\_
4. Underline the correct word:  
(a) Demand curves slope (up/down).  
(b) The graph shows that as price increases the quantity demanded (increases/decreases).  
(c) In the graph, as the price decreases, the quantity demanded (increases/decreases).

*USA Today* and other newspapers use graphs to illustrate current economic conditions. Bring to class examples of graphs illustrating economic concepts such as inflation and interest rates, interest rates and housing starts, earnings and years of education.

Answers: 1. 3; 2. 6; 3. 1; 4a. down; 4b decreases; 4c. increases.

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Adapted from: Indiana Department of Education. (1988). *Consumer Education, Indiana Consumer and Homemaking education Curriculum Guide*, Indianapolis, IN: Author, ce unit 1 8.

## WRITE A LETTER OF COMPLAINT

Home Economics Content Area: Consumer Education/Resource Management

Basic Skill: Comprehend rights and responsibilities of citizens of the United States.

Home Economics Applications: Recognize the right to be heard. Demonstrate proper complaint techniques.

What do you do when you buy a product and you have a problem with it? To solve a problem with a product, you need to complain to the right person in the right manner.

A large number of consumer complaints are never answered because the consumer does not handle the complaint properly. Some consumers fail to explain the problem clearly, give the important facts and figures, or include a return address. When mailing a letter of complaint, send it by registered mail. Then you will have a record of its delivery. A registered letter is hand delivered, and the receiver must sign for it.

**Directions:** Write a letter of complaint about a product you or your family purchased recently that was not satisfactory. Before mailing your letter, check it against the checklist that follows or an evaluation form developed by your class.

### CHECKLIST

Standards	Yes	No
Envelope shows my name and full address along with the company address.	—	—
Company address is on letter.	—	—
Letter is neatly written or typed.	—	—
My address and telephone number are included.	—	—
Product name is included.	—	—
Product model number is included.	—	—
Place and date of purchase is given.	—	—
Copy of the receipt (not the original) is enclosed.	—	—
Problem is stated clearly and briefly.	—	—
Suggested solution is stated clearly.	—	—

**Standards****Yes      No**

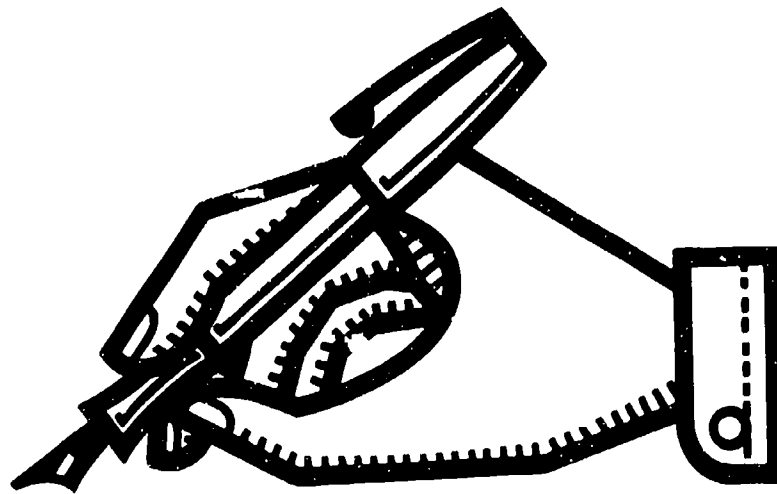
Copies of relevant materials such as labels or sample ads are enclosed.  
(Send copies, not originals.)

—      —

I have kept a copy of my letter.

—      —

If you receive a response to your letter before the class is over, share it with your classmates.



Adapted from: Indiana Department of Education. (1988). *Consumer Education, Indiana Consumer and Homemaking Education Curriculum Guide*. Indianapolis, IN: Author. ce unit 8 45.

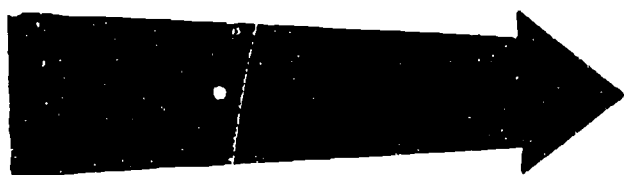
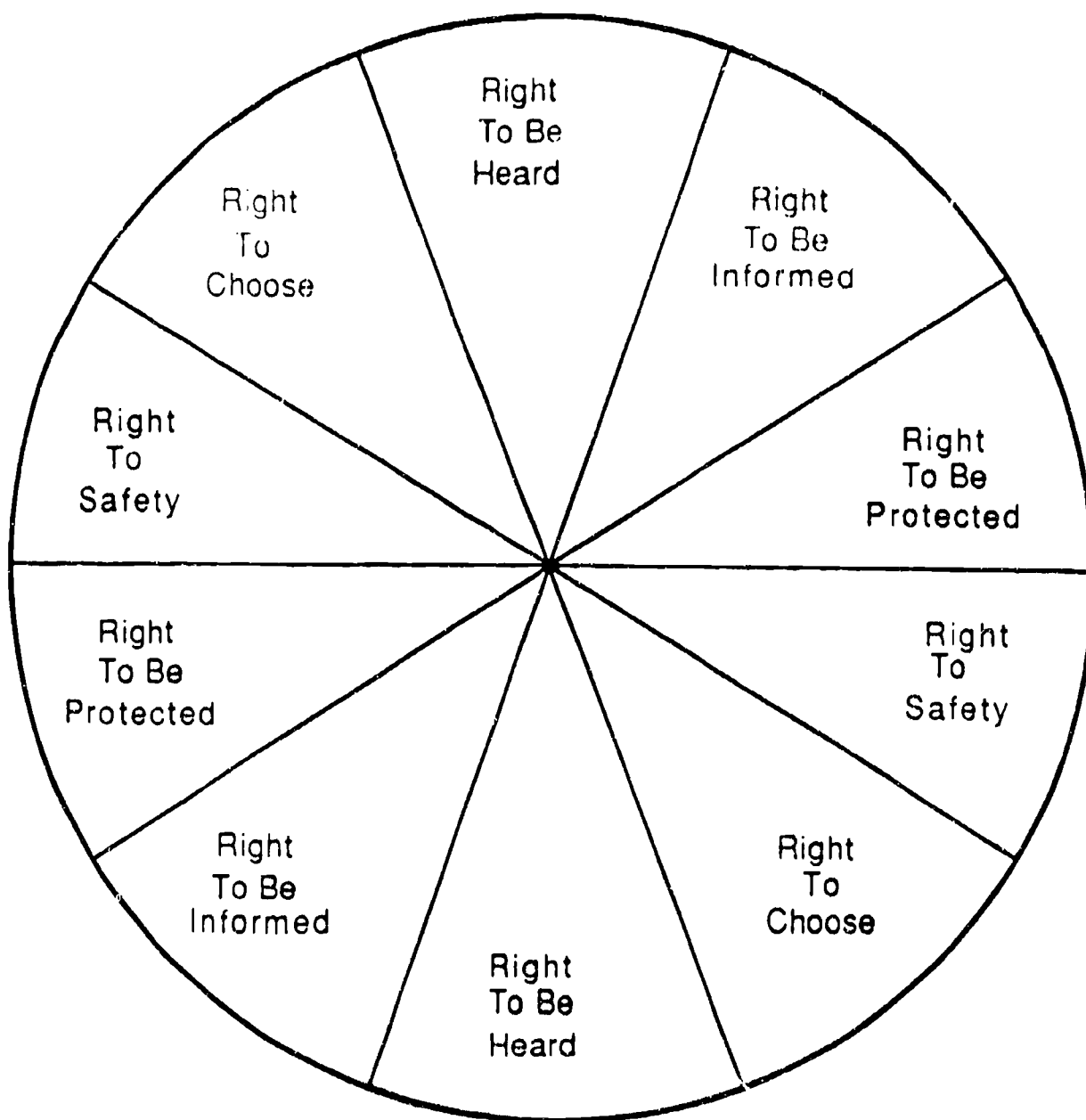
## RIGHTS AND RESPONSIBILITIES GAME

Home Economics Content Area: Consumer Education/Resource Management

Basic Skill: Explain rights and responsibilities of citizens of the United States.

Home Economics Application: Identify the responsibilities with each consumer right.

**Directions:** Glue arrow and wheel on cardboard and cut them out. Fasten arrow to the center of the wheel with a brad or tack. Spin and name a responsibility that goes with the right on which the arrow lands. Compare answers with the list on the next page. The class could divide into teams and compete for prizes.



Some responsibilities for each of the rights are as follows:

1. Right to be informed.
  - a. Analyze advertisements.
  - b. Check care instructions, guarantees and other labels before buying.
  - c. Use a wide variety of information sources.
2. Right to be heard.
  - a. Express complaints and satisfactions.
  - b. Know where to go to express yourself.
  - c. Make suggestions for product improvement.
3. Right to safety.
  - a. Report any unsafe products.
  - b. Examine merchandise for safety features.
  - c. Read and follow all use and care instructions.
4. Right to choose.
  - a. Deal with reputable businesses.
  - b. Choose carefully.
  - c. Choose products and services that meet your needs at prices you can afford.
5. Right to be protected.
  - a. Use your voting privilege.
  - b. Know where to go to express yourself.
  - c. Know and respect laws and standards.

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Adapted from: Indiana Department of Education. (1988). *Consumer Education, Indiana Consumer and Homemaking Education Curriculum Guide*. Indianapolis, IN: Author, ce unit 8 47.

## LIFESTYLE INGREDIENTS

Home Economics Content Area: Consumer Education/Resource Management

Basic Skill: Understand selected terms related to the decision-making process.

Home Economics Application: Identify and illustrate terms that relate to consumer decision-making.

**Directions:** In each group of sentences below, finish the first sentence correctly by using one of the words from the list. Finish the second sentence of each group with facts about your own life. Discuss your answers with classmates, noting similarities and differences of responses.

Words to choose from:    goals                      needs                      values  
                                    life cycle                  personal factors        wants  
                                    lifestyle                  resources

1. The things a person considers essential to his/her life are:

\_\_\_\_\_ .

Some of the things that make my life special, unique, or different from other people's lives are:

2. The things desired by individuals, but not considered essential are:

\_\_\_\_\_ .

Some of the "extra" things I desire are:

3. Things a person considers correct, desirable, and important are:

\_\_\_\_\_ .

For me, some of these are:

4. Things a person decides to work toward accomplishing are called:

\_\_\_\_\_ .

Some of the things I want to work toward are:

5. It will take money, time, effort, skills, equipment, and other supplies to accomplish things in life. These are called:

\_\_\_\_\_ .

For me, some of these are:

6. Everyone passes through certain stages of development during their lifetime. This stage-by-stage process is called:

\_\_\_\_\_ .

I can describe the current stage of my life by telling that my age is:

\_\_\_\_\_ .

I live with: \_\_\_\_\_ .

I receive money from: \_\_\_\_\_ .

My main job is: \_\_\_\_\_ .

7. Each person's characteristics combine in a unique way of life called:

\_\_\_\_\_ .

Some of the things that make my life special, unique, or different from other people's lives are:

Answers: 1. Needs; 2. Wants; 3. Values; 4. Goals; 5. Resources; 6. Life cycle; 7. Lifestyle. Answers will vary for the second part of each item.

Adapted from: Indiana Department of Education. (1988). *Consumer Education, Indiana Consumer and Homemaking Education Curriculum Guide*. Indianapolis, IN: Author, ce unit 1 12.

## APPLYING THE DECISION MAKING PROCESS

Home Economics Content Area: Consumer Education/Resource Management

Basic Skill: Apply problem solving skills to a current issue.

Home Economics Application: Apply the decision making process to a family management problem.

**Directions:** Read the following management problem. Then relate each step of the decision-making process to the actions taken by Pat. For each of the steps below fill in the action taken by Pat.

Pat recently found a job after school as a cashier in the local drugstore. Pat was excited about the new job but worried about how to get to and from work. Possibilities included walk, ride a bus, and ask parents for transportation. Some of the solutions were possible, but walking was out of the question since the distance was too great for Pat to get to work on time. Pat did not want to depend on parents because both worked. So Pat decided to ride the bus every day. This decision made Pat's parents very proud since Pat was taking the responsibility for getting to and from work. It also gave Pat the feeling of being proud of this decision.

Step 1— \_\_\_\_\_  
(Define the problem)

Step 2— \_\_\_\_\_  
(Seek all options)

Step 3— \_\_\_\_\_  
(Consider consequences of each option)

Step 4— \_\_\_\_\_  
(Make a decision)

Step 5— \_\_\_\_\_  
(Evaluate)

Answers: 1. How to get back and forth to work; 2. Walk, ask parents for transportation, ride a bus; 3. Walking did not allow time to get to work, both parents work and therefore cannot provide transportation, bus would get Pat to work on time.; 4. Ride the bus every day; 5. Pat and her parents felt proud because she accepted responsibility for her own transportation, solution satisfied concerns of time and cost.

Adapted from: Indiana Department of Education (1988). *Human Development, Indiana Consumer and Homemaking Education Curriculum Guide*. Indianapolis, IN: Author, hd unit 4 17.

## HOUSING AND ENVIRONMENT

Home Economics Content Area: Housing/Home Furnishings

Basic Skill: Locate information by using maps.

Home Economics Application: Understand factors influencing types of homes built by people throughout the world.

**Directions:** Locate the countries listed below on a map. Study the geography of the countries. Provide reasons why these types of homes have been built throughout the history of these countries.

China (Houseboats)

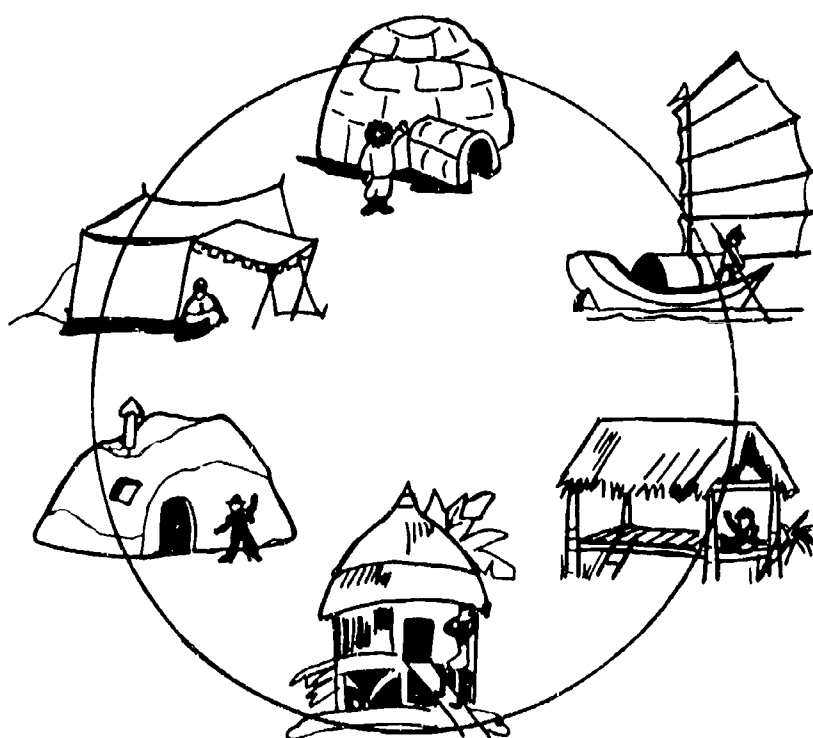
Holland (Canalboats)

Switzerland (Chalets or "A" Frames)

Norway (Log Houses)

Ireland (Sod Houses)

Bolivia (Fieldstone Houses)



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Recommended teacher reference: Oliver, P. (1987). *Dwellings: The house across the world*. Austin, TX: University of Texas Press.

Adapted from: Indiana Department of Education. (1988). *Housing, Indiana Consumer and Homemaking Education Curriculum Guide*. Indianapolis, IN: Author, hg unit 5 7.

## TELEVISION AND SEX-ROLE STEREOTYPING

Home Economics Content Area: Human Development

Basic Skill: Identify instances of stereotyping.

Home Economics Application: Identify ways television promotes and reinforces sex-role stereotyping.

**Directions:** Your television viewing for the next day will be not only relaxing, but also part of your homework. Watch as many television commercials as possible and fill out a chart like the one below for each commercial you analyze. If possible, try to analyze some commercials that sponsor shows for young children.

Commercial: \_\_\_\_\_

Main Characters	Males	Females
Physical appearance		
Personality characteristics		
Activities in which the character is involved		
If there is a problem, what is it? Who has the problem?		
Who resolves the problem? How?		

**Key Questions:** How does this commercial promote or inhibit sex-role stereotyping for men? For women?

You may also use this form to evaluate a television program for sex-role stereotyping. After evaluating the program, you may wish to role play for the class one or two scenes from the show.

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Adapted from: Indiana Department of Education. (1988). *Consumer Education, Indiana Consumer and Homemaking Education Curriculum Guide*. Indianapolis, IN: Author, ce unit 5 21.

## GENDER ECONOMIC AND CAREER ISSUES

Home Economics Content Area: Human Development

Basic Skill: Identify instances of stereotyping.

Home Economics Application: Develop an awareness of the effects of gender stereotyping on current economic issues.

**Directions:** Read a current magazine article on a gender-related economic issue that affects people in the workplace, such as equal pay for equal work. Write a report of your findings and evaluate the source of information, including answering the following questions:

1. Are males and females affected equally?
2. Is the information reliable and free of bias? If not, in your opinion, what are the biases? What makes the article unreliable?
3. Is the information worth knowing? Why?

OR

Interview the most prominent local businesswoman or professional woman you know—the one who appears to have it all—and find out what choices she made to reach her current position. Ask the following questions. Write a report summarizing her responses.

1. How did you become interested in your career?
2. How did your family feel about you going into this kind of work?
3. What obstacles did you have to overcome?
4. Do you feel there has been discrimination against you in terms of your salary? Advancement? Job responsibility?
5. Are you married? If so, does your work affect your family life?
6. Do you recommend that other women follow in your footsteps?
7. How does your career path compare to the career path of a successful businessman?



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Adapted from: Indiana Department of Education. (1988). *Consumer Education, Indiana Consumer and Homemaking Education Curriculum Guide*. Indianapolis, IN: Author, ce unit 5 5.

## CLEAN YOUR PLATE CLUB!

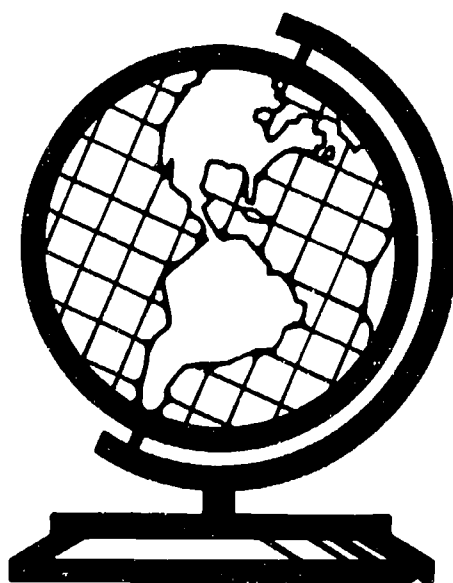
Home Economics Content Area: Nutrition/Foods

Basic Skill: Relate concepts of supply and demand to historical events and current affairs.

Home Economics Application: Comprehend how world food production and distribution are related to available resources, politics, and economics.

**Directions:** Analyze the statement, "You should eat everything on your plate because there are children starving in other countries." Answer the following questions: Does it help them if we eat our food? Why? What factors affect the supply and demand for food in America and in other countries.

Find and read a newspaper article related to the distribution of the world food supply. How will the situation described affect what you eat in the next year?



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Adapted from: Indiana Department of Education. (1988). *Nutrition and Food, Indiana Consumer and Homemaking Curriculum Guide*. Indianapolis, IN: Author, unit 29 16.

## CULTURAL EATING PATTERNS

Home Economics Content Area: Nutrition/Foods

Basic Skill: Illustrate how people of different cultures have common fundamental needs but use different ways of meeting these needs.

Home Economics Application: Compare eating patterns of different cultures.

**Directions:** On the map below, chart the course of travel your ancestors or others took after arriving in the United States. List the countries of origin of these people. Tracing a course of travel can be worked out with a parent, grandparent, or other significant adult who has an understanding of their lineage. Use colored markers or pencils to show travel routes. Describe how these people traveled, and determine the distance of their trips. Relate food and eating patterns developed by your family to their travels throughout the United States. Compare what you found out with other members of your class.



Countries of Origin

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Adapted from: Indiana Department of Education. (1988). *Nutrition and Food, Indiana Consumer and Homemaking Curriculum Guide*. Indianapolis, IN: Author, nf unit 17 7.

## PART III

# SELECTED RESOURCES

Selected references and resources to assist the home economics teacher in teaching basic skills are listed in this section. Addresses are provided for some materials which may be difficult to locate through typical distribution channels. When an address is provided, the source number follows the citation. Addresses are located in the Source List at the end of the section.

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Instructional Materials  
120 Driftmier Engineering Center  
University of Georgia  
Athens, GA 30602
2. Arkansas Vocational Curriculum  
Dissemination Center  
University of Arkansas  
115 Graduate Education Building  
Fayetteville, AR 72701
3. Center Publications  
Center on Education and Training for Employment  
1960 Kenny Road  
Columbus, OH 43210
4. Curriculum Development Unit  
Kentucky Department of Education  
Office of Vocational Education  
20th Floor Capital Plaza Tower  
Frankfort, KY 40601
5. ERIC Document Reproduction Service  
3900 Wheeler Avenue  
Alexandria, VA 22304
6. Home Economics Education  
Oregon Department of Education  
700 Pringle Parkway, SE  
Salem, OR 97310
7. Instructional Materials Laboratory  
842 W. Goodale  
The Ohio State University  
Columbus, OH 43212
8. University Bookstore  
Memorial Union  
Iowa State University  
Ames, IA 50011
9. Vocational Education Materials Center  
Green Street  
University of Georgia  
Athens, GA 30601

10. The Vocational Studies Center  
University of Wisconsin-Madison  
265 Educational Sciences Building  
1025 W. Johnson Street  
Madison, WI 53706
11. West Virginia Vocational Curriculum Laboratory  
Cedar Lakes Conference Center  
Ripley, WV 25271

# YOUR NOTES...